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Little Beaver
Conservation
District
Little Beaver
Conservation
District, Fallon
County, Montana

LITTLE BEAVER CONSERVATION DISTRICT

FALLON COUNTY, MONTANA

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LONG RANGE PLAN OF RESOURCE CONSERVATION FOR THE FUTURE

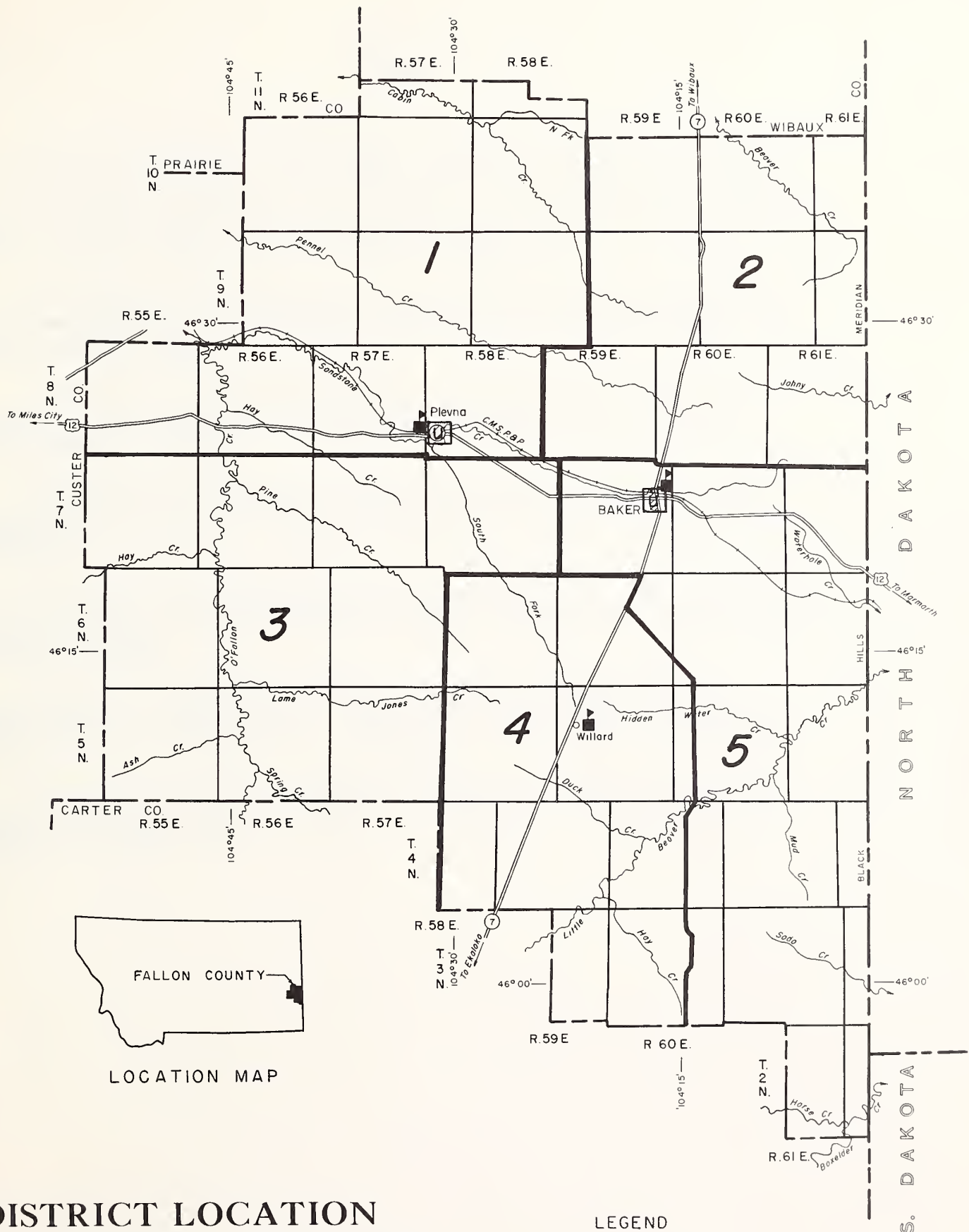
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FOREWORD

The Little Beaver Conservation Program is a guide to assist the district supervisors and others with the over-all development of the natural resources in the county. This program was prepared by the Board of Supervisors, with assistance from numerous individuals, groups, state, local and federal agencies.

Section I deals with the over-all operations of the district program including authorization, history, and responsibilities of the governing body.

Section II outlines the policy as adopted by the district board. These statements provide the direction for development of district resources.

Section III includes an inventory of the resources in the district and presents a detailed analysis of the current resource situation.

Section IV outlines the broad objectives, goals and priorities which the district will strive to achieve through the implementation of this program.

Section V identifies various problems and opportunities which exist in the district. These will be reviewed and used by the board as a reference for developing their annual plan of work.

Section VI deals with various alternatives available to the district to use in implementing this program to attain the goals they have established.

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THE DISTRICT PROGRAM

GENERAL

A. Perspective. The Little Beaver Conservation District Program is a plan of assistance on the local level to Conservation District co-operators for soil and water conservation and related natural resources uses based on land capability. The Conservation District contributes to:

1. Resource Conservation and Development Planning
2. Land Use Planning
3. Environmental Enhancement Planning
4. Pollution Abatement Planning

The plan involves 1) carrying out policy, 2) getting and reacting to public involvement, 3) recognizing the problems and opportunities for wise use and development, 4) setting goals, 5) setting objectives, 6) setting priorities, 7) analyzing the natural resources, 8) securing financing, 9) promoting conservation education, soil stewardship and information activities, 10) implementation through coordination and co-operation of land occupiers and many resource groups and agencies, and 11) continuing evaluation to reflect changing situations.

B. Purpose. More specifically the district program is a Long Range Plan intended to:

1. Involve the public and cooperators to carry out the policy of the State of Montana and the district with respect to the conservation of the soil and water resources and for the control and prevention of soil erosion, prevention of floodwater and sediment damages, furthering the conservation, development, utilization and disposal of water. It shall further be the district's aim to prevent and to control floods, prevent impairment of dams and reservoirs, protect the tax base, protect public and private lands, etc., to assist in the carrying out of the environmental policies and programs of the state relative to natural resources, to

assist in the carrying out of land use policies and regulations as provided in various state and federal statutes.

ADMINISTRATIVE
GUIDE

2. Serve as an administrative guide for supervisors; an outline of the means whereby the board of supervisors hopes to bring about the coordination of the effort for the orderly development of the natural resources on all lands in the district.

REFERENCE
GUIDE

3. Serve as a reference guide for technicians, county commissioners, land use planners, community planners, researchers, educators, and others working with the district, particularly for those agencies which require a district program to follow as provided in Memorandums of Understanding or other appropriate agreements.

ANNUAL WORK
PLAN BASIS

4. Serve as a basis for developing the district's Annual Plan of Operations.

INFORMATION

5. Serve as the basis for information programs. Information will be directed to the public, particularly electors, cooperators, land owners-managers-occupiers-developers, legislators, county commissioners, conservation agencies and organizations, schools, churches, libraries, and planning and development agencies.

PROBLEMS AND
OPPORTUNITIES

6. The District program will identify what the supervisors together with the cooperating agencies and advisory groups recognize as conservation problems and opportunities within the district and outline what must be done to correct the problems and/or develop the wise use of the natural resource. This program will attempt to give some history of the district, to evaluate the present condition of the natural resource - soil, water, vegetation, wildlife, the opportunities that exist to protect and develop these

resources, and the policies, objectives, goals, and working procedures of the supervisors. This program gives consideration to all public and private lands.

PRIVATE LANDS

7. Basically the district program has jurisdiction in the private ownership land area, dealing with the soil, water and related resources. It has as an overall objective the treatment of each acre of land according to its needs and use of the land within its capabilities.

PUBLIC LANDS

8. Mutual problems and opportunities for the conservation, development and use of public lands are intended to be correlated with the public land administrators, managers and users.

METHOD

9. The voluntary approach is used whereby land occupiers sign a cooperative agreement as a member of the conservation district wherein their lands are located and agree to develop and carry out a conservation land use plan with assistance as may be provided by the district. There are mandatory provisions in the Conservation District law for land use regulations determining sediment control. These will be enforced should voluntary methods fail.

SOIL CONSERVATION

10. The primary purpose of the district is soil erosion prevention. In doing this, the district necessarily becomes involved in water conservation, rangeland development, forestry, and all related land uses. The Conservation District has been agriculturally oriented as this is how most of the land and water is used. It has received assistance primarily from agriculture agencies. It is anticipated that other agencies may offer assistance. Increased pressures and demands by people for land related natural resources as a place to live, to work and to play are expanding the district's role. Many cooperators of the district are now non-agricultural. Coupled with this pressure of the public for a wider diversity of uses is a demand for a quality environment, aesthetics etc. This program will carry the further purpose of attempting to plan greater measures for pollution control and

abatement, ecological considerations, population accomodation with the ultimate aim of proper use of land, highest use for the greatest number, or highest and best use within its capabilities or an intelligent choice of uses among the many competitive uses, multiple use concept vs. single use, etc. plus an evaluation of trends toward public ownership, and the various methods of restrictions and regulations imposed on property that might be used to affect proper land use. Emphasis will be placed upon enhancement of water quality, natural beauty, wildlife, preservation of scenic qualities, historic sites, unique natural areas, improvement of environmental health, job opportunities, and education of the public.

- C. Authorization. The district program is authorized under the provisions of Montana Conservation Districts Law 76-101 to 76-117 and 76-201 to 76-233, Revised Codes of Montana as amended, particularly Section 76-108 (8) and is required as part of Memorandum of Understanding or other appropriate Agreements the district has and is authorized to cooperate and receive assistance from:

U.S. Department of Agriculture dated _____.
Soil Conservation Service dated October 4, 1967.
Montana Department of Natural Resources and Conservation dated March 8, 1973.
Montana Department of State Lands dated February 9, 1970.
Montana Fish and Game Commission dated September 29, 1967.

Informal working relations have been established or are desired for cooperation and assistance from the following:

Federal U.S. Department of Agriculture.
Forest Service.
Agricultural Research Service.
Farmers Home Administration.
Agricultural Stabilization and Conservation Service.
U.S. Department of Interior.
Bureau of Outdoor Recreation.
Bureau of Reclamation.
Bureau of Sports Fisheries and Wildlife.
U.S. Geological Survey.
U.S. Department of Health, Education and Welfare.

U.S. Department of Commerce.
Office of Economic Opportunity.
U.S. Department of Housing and Urban Development.
U.S. Department of Labor.
Economic Development Administration (EDA)
U.S. Environmental Protection Agency.
U.S. Army Corps of Engineers.

STATE Montana Highway Commission
Montana Environmental Protection Council
Montana Department of Intergovernmental Relations
Montana Department of Health and Environmental
Sciences
Montana Extension Service
Montana Department of Lands

LOCAL County Commissioners
City of Baker
City of Plevna
City-County Planning Boards
County Planning Boards
School Districts
South Sandstone Group

Non-Governmental

Associations of resource interests such as development groups, marketing groups, sportsmen's groups, banks, churches, youth groups, civic groups etc.

Other major laws which relate to the district program are:

P. L. 566, Watershed Protection and Flood Prevention Act of 1954
P. L. 87-703, Section 102 of the Food and Agriculture Act of 1962, Resource Conservation and Development Program
P. L. 91-190, 91st Congress, S. 1075, Jan. 1, 1970, National Environmental Policy
P. L. 92-500 Federal Water Pollution Control Act
Water Quality Rules and Regulations of Montana Department of Health and Environmental Sciences
Flood Plain Rules and Regulations of Department of Natural Resources and Conservation
Subdivision Regulations of Department of Intergovernmental Relations, County Commissioners

D. Organization, location, acreage

The District was first organized on October 17, 1942 as a result of petitions of the State Soil Conservation Committee and a hearing and referendum held and included 425,517 acres

which encompassed all of the Little Beaver Creek drainage in Fallon and Carter Counties and that portion of Fallon County lying southeast of Little Beaver Creek. The boundaries were later changed to exclude those lands in Carter County and include all of Fallon County. The towns of Baker and Plevna petitioned and entered the District in 1968. The present land area of the Little Beaver district is 1,045,120 acres.

The District name was "Little Beaver Soil Conservation District" until 1961 when it was changed to "Little Beaver Soil and Water Conservation District", and in 1971 the name was changed to "Little Beaver Conservation District". These changes represent the broader areas of resource conservation and development related to the district by greater assumed responsibilities and changes in the law to reflect the same.

RESPONSIBILITIES

E. Supervisor Responsibilities and Authorities

The supervisors are elected by the qualified electors within the district. They are the governing body of the Conservation District with broad authorities as outlined in the Conservation Districts Law to develop and carry out a resource conservation and development program with the use of all available resources. It is the policy of the district to cooperate with and use the services of other agencies for technical, educational, planning, research, and financial assistance to private land occupiers to plan and apply conservation practices. The State Department of Natural Resources and Conservation and District Supervisors can request state and county funds for the operation of the District.

POLICIES

It is the policy of the Little Beaver Conservation district to involve the public and cooperators to carry out the program of the State of Montana and the district with respect to the conservation of the soil and water resources and for the control and prevention of soil erosion, prevention of floodwater and sediment damages, furthering the conservation, development, utilization and disposal of water. It shall further be the district's aim to prevent and to control floods, prevent impairment of dams and reservoirs, protect the tax base, protect public and private lands, to assist in the carrying out of the environmental policies and programs of the state relative to natural resources and to assist in the carrying out of land use policies and regulations as provided in various state and federal statutes.

Specifically, the Little Beaver Conservation District adopts the following policy for their resource planning program:

- A. Encourage an accelerated education and information program to convey a basic understanding of the need for proper land use to all segments of society. Land use policies and plans must be developed with broad public involvement to ensure citizen support and understanding.
- B. Consideration will be given to the needs and desires of the people to provide a quality environment, to ensure attractive, convenient and satisfying places to live, work and play.
- C. The rights of economic opportunity and freedom of choice in the use of land should remain with the landowner so long as they do not destroy the resource or conflict with a safe, clean and healthy environment for society.
- D. Land use policies should be oriented toward protection of the aesthetic values, which are an integral part of our history and way of life.
- E. The capability and limitation of soils will be considered in making land use decisions or when increasing the intensity of a land use.
- F. Land use policies should consider the impact and influence of the property tax structure. Tax structure should encourage agriculture, wildlife, recreation and similar uses of land in the public interest.

- G. To develop and improve the rangeland resource for maximum production, protection of the soil resource and to prevent or reduce sediment pollution of water.
- H. To provide broad direction and coordination in maintaining water quality while attaining maximum beneficial use of the surface and ground water resources.
- I. Development which results in unsightly urban sprawl should be discouraged.
- J. Should mining occur, construction and similar activities which alter and destroy the surface of the land must be treated and reclaimed for planned future uses.
- K. Land use policies and plans need periodic review to determine changes in land resources use which are consistent with environmental and social needs.
- L. To request or promote reservation of water with priorities going to domestic and agricultural purposes.
- M. To cooperate with other agencies etc..

PRECIPITATION
(inches)

Years of Record - 1925 - 1972

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SPT.	OCT.	NOV.	DEC.	AV. YEARLY
Maximum	1.69	1.13	2.33	3.43	6.24	6.77	.35	3.29	4.87	4.32	1.26	2.08	24.34
Minimum	0	0	0	0	0.19	0.62	5.17	0.05	0	0	0	0	7.61
Monthly Average	0.47	0.37	0.60	1.23	1.89	3.30	1.95	1.23	1.27	0.77	0.42	0.38	13.89

Source: MDU Records.

9

TEMPERATURE
(degrees Fahrenheit)

47 years of records

	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SPT.	OCT.	NOV.	DEC.
Mean Temp.	14.8	17.9	27.0	43.2	54.4	62.4	71.9	69.9	58.7	46.7	30.4	20.6
Mean Daily Maximum	26.8	30.0	39.2	59.2	67.3	75.9	86.4	85.2	73.3	60.0	42.9	32.0
Mean Daily Minimum	2.0	5.7	16.1	29.5	40.0	49.3	55.8	52.9	42.2	30.9	18.7	7.8

Mean No. of
Days Over 90°

Av. 25

Mean No. of
Days Less
Than 32°

208

Source: Climatology of the United States No. 86-20, 10-yr. record.

CLIMATE

Climate in the District can be described as continental with cold winters, warm summers and marked variations in seasonal precipitation. The average annual precipitation is 13.9 inches per year at Baker with 80% occurring during the growing season April-September. June is normally the wettest month followed by May and July. Summer precipitation normally occurs as thunderstorms, but gentle rains are common in May, June and September. Thunderstorms will occasionally result in hailstorms causing damage to crops. Past records show that dry years will occur 10-20 per cent of the time.

Winter snowfall is not heavy, averaging approximately 20 inches per year. Greatest snowfalls will usually occur in late winter or early spring.

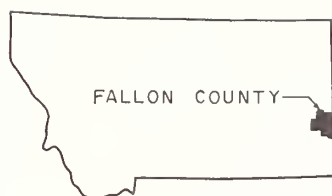
Some very cold weather can be expected each winter; however, these cold spells ordinarily last only a few days. Occasionally January or February temperatures will average below zero. Mild winters are not uncommon.

Summer temperatures are characterized by warm weather lasting for weeks at a time. Some hot weather occurs each year but seldom lasts for more than a few days at a time. Temperatures can reach 90° F. or more during any month from May to September. Sunny weather occurs 70 to 80 percent of the time.

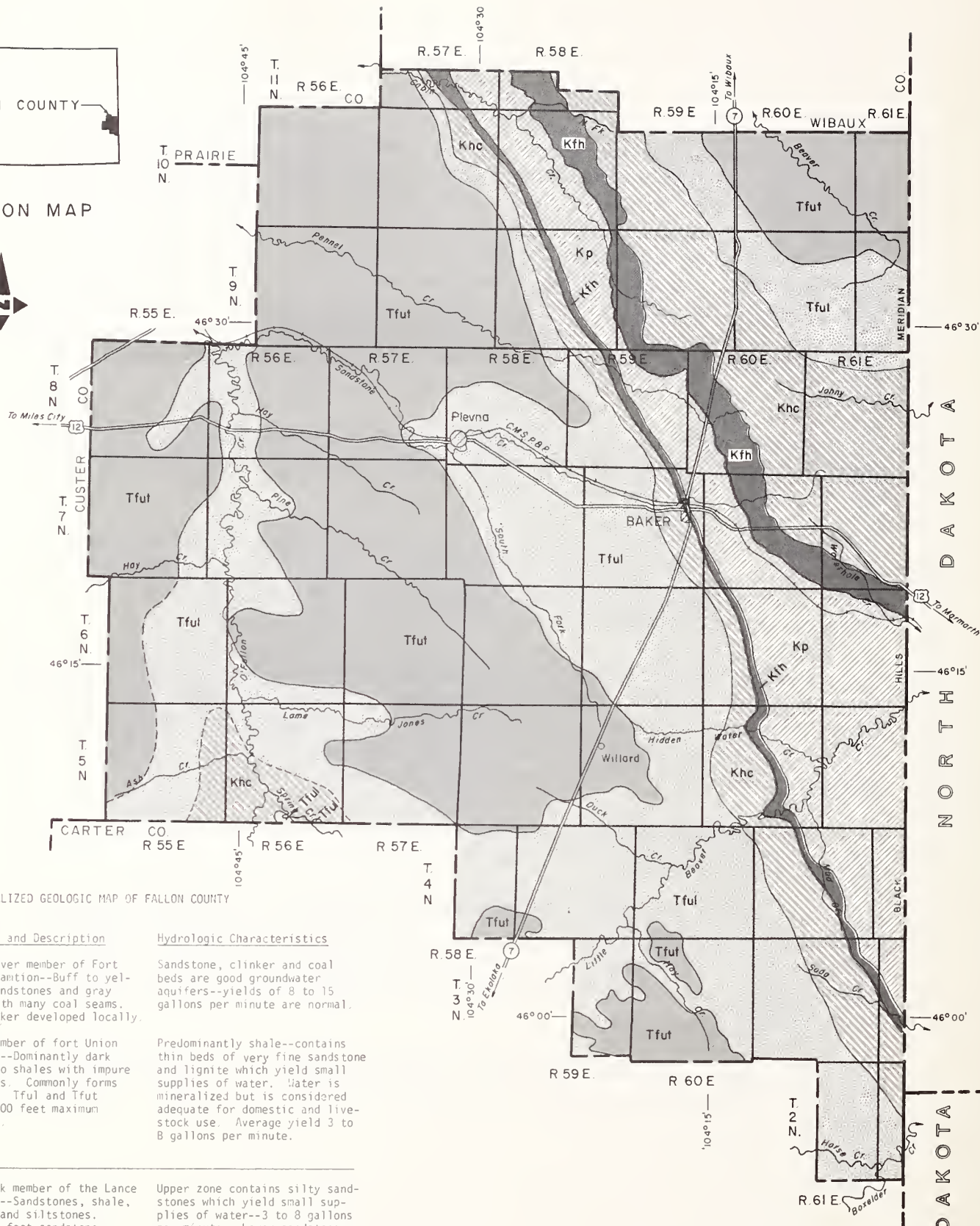
The average growing season is approximately 110-130 days but will vary considerably from year to year.

The winds are prevailing from the west and northwest and are most severe during late winter or early spring. Winds of sufficient speeds to cause soil erosion can occur during any month. Occasionally hot winds during July and August can cause reduced crop yields.

The data included from the record of the U.S. Weather Bureau Station at Baker is fairly representative of the climate throughout the District.



LOCATION MAP



GENERALIZED GEOLOGIC MAP OF FALLON COUNTY

Symbol	Formation and Description	Hydrologic Characteristics
Tfut	Tongue River member of Fort Union Formation--Buff to yellowish sandstones and gray shales with many coal seams. Much clinker developed locally.	Sandstone, clinker and coal beds are good groundwater aquifers--yields of 8 to 15 gallons per minute are normal.
Tful	Ludlow member of Fort Union Formation--Dominantly dark gray gumbo shales with impure sandstones. Commonly forms badlands. Tful and Tfut attains 600 feet maximum thickness.	Predominantly shale--contains thin beds of very fine sandstone and lignite which yield small supplies of water. Water is mineralized but is considered adequate for domestic and live-stock use. Average yield 3 to 8 gallons per minute.
Khc	Hell Creek member of the Lance Formation--Sandstones, shale, mudstone and siltstones. Basal 100-foot sandstone. Maximum thickness of 600 feet.	Upper zone contains silty sandstones which yield small supplies of water--3 to 8 gallons per minute. Lower sandstone aquifer is considered an excellent aquifer--yields 10 to 15 gallons per minute.
Kfh	Fox Hills Sandstone--cross bedded variegated sandstone, siltstone and shales. Upper 40 feet is sandstone named Colgate member. 100 to 150 feet total thickness.	Best aquifer in the area. Under artesian pressure in most of the county. Yields average 30 to 100 gallons per minute.
Kp	Pierre Shale--Impure dark gray shale that contains bentonite, concretions, large boulders of sandstone, gypsum veins and crystals, and local beds of sandstone. Approximately 3100 feet total thickness.	Tight shales--not considered a ground water aquifer--small supplies of highly mineralized water not suitable for any use.

GEOLOGY FALLON COUNTY, MONTANA

JUNE 1974

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION
SOURCE MATERIALS : AMS TOPOGS. NL 13-5 & NL 13-8

Compiled from: Perry, Eugene S., 1935, *Geology and Ground-Water Resources of Southeastern Montana*, Montana Bureau of Mines and Geology, Memoir No. 14, and Taylor, D. James, 1965, *Ground-Water Resources Along Cedar Creek Anticline in Eastern Montana*, Montana Bureau of Mines and Geology, Memoir No. 40.

GEOLOGY

The geologic history of Fallon County includes long periods of sedimentation with only minor interruption by uplift and erosion until the end of Cretaceous time (about 65 million years ago). At the end of Cretaceous time, a period of major structural upheaval uplifted a structure called the Cedar Creek Anticline, which trends northwesterly across the northeastern half of Fallon County. Subsequent erosion has exposed some older geologic formations along the crest of the anticline. After the period of major structural upheaval and erosion sedimentation resumed and has continued to the present time.

The geologic formations most important to the water resources of Fallon County include alluvia of the Recent age (less than twenty thousand years old); and the Hell Creek, Fox Hills and Pierre Formations of the Cretaceous Age (65 to 135 million years old).

The Fort Union Formation is exposed at the ground surface on the west side of the Cedar Creek anticline and in the northeastern part of Fallon County along the east side of the anticline. The Fort Union Formation attains a maximum thickness of five hundred to six hundred feet in the county and consists of interlayered beds of shale siltstone, lignite coal, limestone, and discontinuous sandstones. Many relatively shallow water wells in Fallon County produce water from sandstone and coal beds in the Fort Union.

The Hell Creek Formation of Cretaceous age, which lies below the Fort Union, consists of about two hundred feet of non-marine and brackish water sandstone, shale mudstone, and siltstone. The Hell Creek is exposed at the ground surface in a narrow band along the west flank of the Cedar Creek Anticline and in a broader band, about a township wide, on the east side of the anticline. Sandstones of the Hell Creek will normally yield abundant quantities of soft water for stock and domestic use. Locally the water may be highly mineralized.

The Fox Hill Formation of Cretaceous age lies below the Hell Creek formation. The Fox Hill Formation is exposed at the ground surface as two narrow parallel bands along the crest of one hundred to one hundred fifty feet of marine and brackish water deposits of cross-bedded sandstone, siltstone and shale. Generally, adequate supplies of good to fair quality water for stock and domestic use can be obtained from the Colgate and from sandstones of the overlying Hell Creek formations. This water is probably too highly mineralized for general irrigation use.

The Pierre Formation of the Cretaceous age, which lies below the Fox Hill Formation, consists of fifteen hundred to two thousand feet of dark, dense, marine shale and limestone. The Pierre is exposed at the ground surface along the crest of the Cedar Creek anticline and is not a good source of ground water in Fallon County.

GENERAL SOIL MAP

A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil. The soils in one association may occur in another, but in a different pattern.

A map showing soil associations is useful to people who want a general idea of the soils in a county, who want to compare different parts of a county, or who want to know the location of large tracts that are suitable for a certain kind of land use. Such a map is a useful general guide in managing a watershed, a wooded tract, or a wildlife area, or in planning engineering work, recreational areas, and community developments. It is not a suitable map for planning the management of a farm or field, or for selecting the exact location of a road, building, or similar structure, because the soils in any one association ordinarily differ in slope, depth, stoniness, drainage and other characteristics that affect their management.

SOIL ASSOCIATIONS

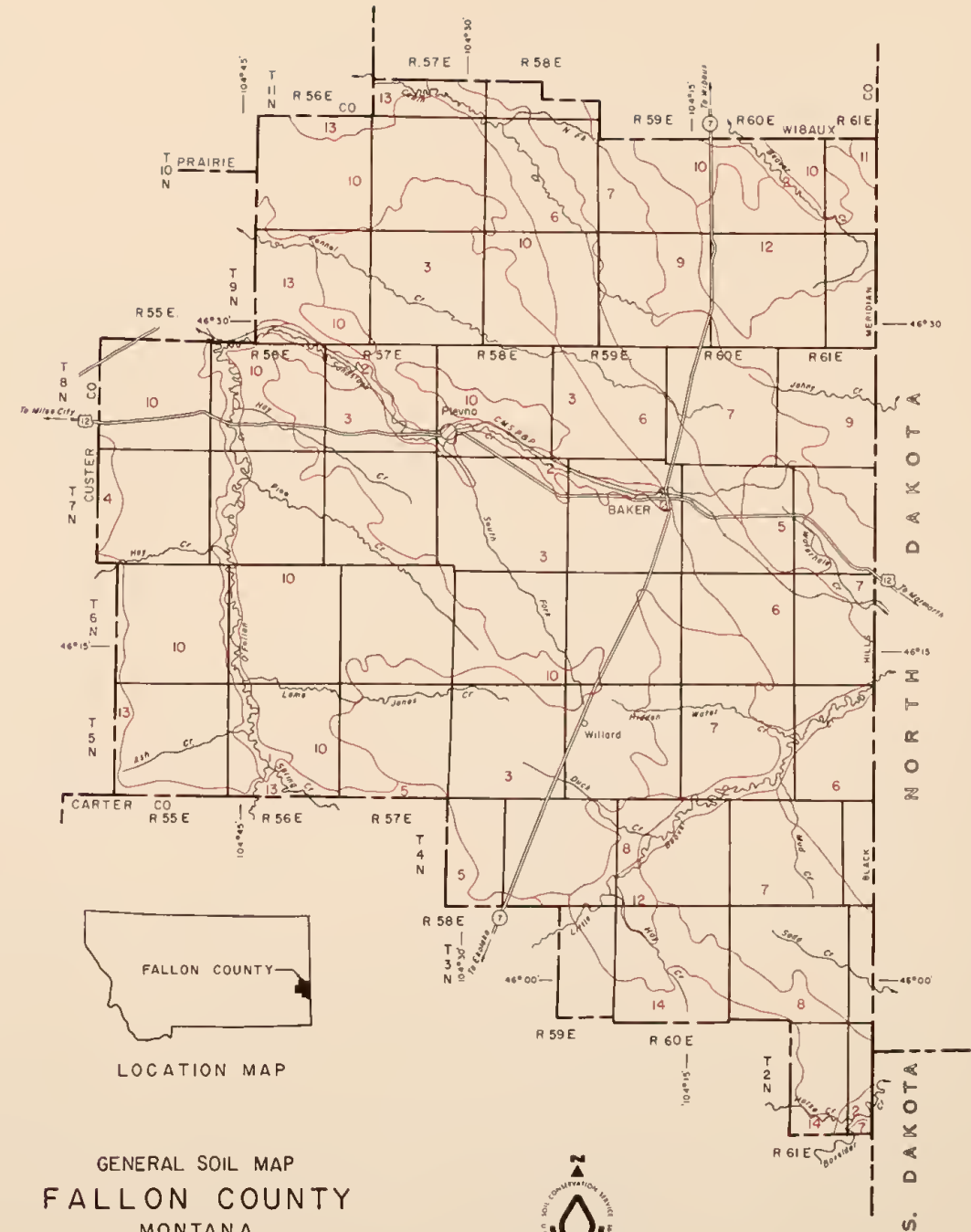
SOILS OF THE FLOOD PLAINS

- 1 Nearly level to gently rolling, deep, well-drained soils on low terraces and flood plains.
- 2 Nearly level and undulating, deep, well-drained and somewhat excessively drained soils on low terraces and flood plains.

SOILS OF THE SHALE AND SANDSTONE UPLANDS

- 3 Undulating to strongly rolling, moderately deep, well-drained soils on shale and sandstone uplands.
- 4 Moderately sloping to very steep, shallow and moderately deep, well-drained soils on red shale and sandstone uplands.
- 5 Gently sloping to strongly rolling, deep, moderately deep and shallow, well-drained and excessively drained soils on shale and sandstone uplands.
- 6 Steep and very steep and undulating to strongly rolling, shallow to deep, well-drained soils on shale and sandstone uplands and on alluvial fans and terraces.
- 7 Undulating to hilly and steep and to very steep, deep to shallow, excessively drained and well-drained soils on shale and sandstone uplands.
- 8 Undulating to hilly, deep to shallow, well-drained soils on alluvial fans and on shale and sandstone uplands.
- 9 Steep and very steep, shallow, well-drained soils and outcrops on shale and sandstone uplands.
- 10 Moderately steep to very steep, moderately deep and shallow, well-drained soils on shale and sandstone uplands.
- 11 Gently sloping to strongly rolling, moderately deep and deep, well-drained and excessively drained soils on shale and sandstone uplands. (Soils in this association are similar to those in association Number 5 except that they have a higher effective precipitation.)
- 12 Gently sloping to undulating, moderately deep, well-drained soils on shale and sandstone uplands.
- 13 Undulating to hilly, moderately deep, well-drained soils on shale and sandstone uplands. (Soils in this association are similar to those in association Number 3 except that they have a lighter colored surface layer.)
- 14 Nearly level to strongly rolling, deep, well-drained soils on alluvial fans, terraces and on shale and sandstone uplands.

This map is intended for general planning. Each delineation may contain soils different from those shown on the map. Use on site inspection for more detailed decisions.



LOCATION MAP

GENERAL SOIL MAP FALLON COUNTY MONTANA

DECEMBER 1972

0 5 10 MILES
SCALE 1:500,000



CONSERVATION PLANS

Approximately 203 operators have signed cooperative agreements with the District. Of these, 128 have completed conservation plans, for the development and management of the natural resources. This totals approximately 598,914 acres or 57% of the area in the District. Eighty-seven operators have entered into a Great Plains Contract with the Soil Conservation Service including 453,350 acres or 43% of the area in the District.

Conservation plans have been established in all areas of the District. Because of changes in land ownership, use and management techniques, there is a continuous need for revisions of these plans as well as the need to expand planned conservation to each acre in the District.

The following table shows district conservation plans by age distribution:

Plans less than 5 years of age	37%
Plans 5 to 10 years of age	22%
Plans over 10 years of age	41%

Acreage by landscape class and subclass
Private and State-owned lands
1967 Conservation Needs Inventory

	Cropland	Pasture	Range	Woodland	Other	Total	% by Land Class
Class 2e	100	0	0	0	0	100	
2c	2,221	0	0	0	0	2,221	
2s	11,873	0	831	0	0	12,704	
2w	300	0	0	0	0	300	
Total 2	14,494	0	831	0	0	15,325	1.7
Class 3e	114,276	5,367	75,679	0	0	195,322	
3s	13,762	0	7,485	0	0	21,247	
3c	12,356	0	2,495	0	728	15,579	
Total 3	140,394	5,367	85,659	0	728	232,148	25.5
Class 4e	43,974	6,341	106,456	0	2,186	158,957	
4s	7,197	3,414	7,485	0	728	18,824	
Total 4	51,171	9,755	113,941	0	2,914	177,781	19.5
Class 6e	25,158	4,390	373,402	500	822	404,272	
6s	1,996	0	16,633	0	0	18,629	
6w	0	488	11,643	0	0	12,131	
Total 6	27,154	4,878	401,678	500	822	435,032	47.8
Class 7e	0	0	2,495	0	0	2,495	
7s	0	0	8,316	260	0	8,576	
Total 7	0	0	10,811	260	0	11,071	1.2
Total 8	0	0	38,255	0	0	38,255	4.3
GRAND TOTAL	233,213	20,000	651,175	760	4,464	909,612	

1/ 122,621 acres of Federal cropland not included.

LAND CAPABILITY CLASSIFICATION

The capability classification is a practical grouping of soils. Soils and climate are considered together as they influence use, management, and the kinds of crops that can be grown. The classification contains two general divisions: (1) Land suited for cultivation and other uses, and (2) Land limited in use and not best suited for cultivation. Each of these broad divisions has four classes. The hazards and limitations in use increase as the class number increases. Capability classes are divided into subclasses. These show the principal kinds of problems involved. The subclasses are: "e" for erosion, "w" for wetness, "s" for soil, and "c" for climate, short growing season or drouthy conditions.

Land Suited For Cultivation and Other Uses

- Class 1 Soils in Class 1 have few or no limitations or hazards. They may be used safely for growing a wide variety of cultivated crops, for pasture, range, woodland, and wildlife. There are no Class 1 lands in the district due to climatic limitations.
- Class 2 Soils in Class 2 have few limitations or hazards. Simple conservation practices are needed when cultivated. They are suited for cultivated crops, pasture, range, woodland and wildlife.
- Class 3 Soils in Class 3 have more limitations and hazards than those in Class 2. They require more difficult or complex conservation practices when cultivated. They are suited for cultivated crops, pasture, range, woodland, and wildlife.
- Class 4 Soils in Class 4 have greater limitations and hazards than Class 3. Still more difficult or complex measures are needed when cultivated. They are suited for growing cultivated crops, pasture, range, woodland, and wildlife.

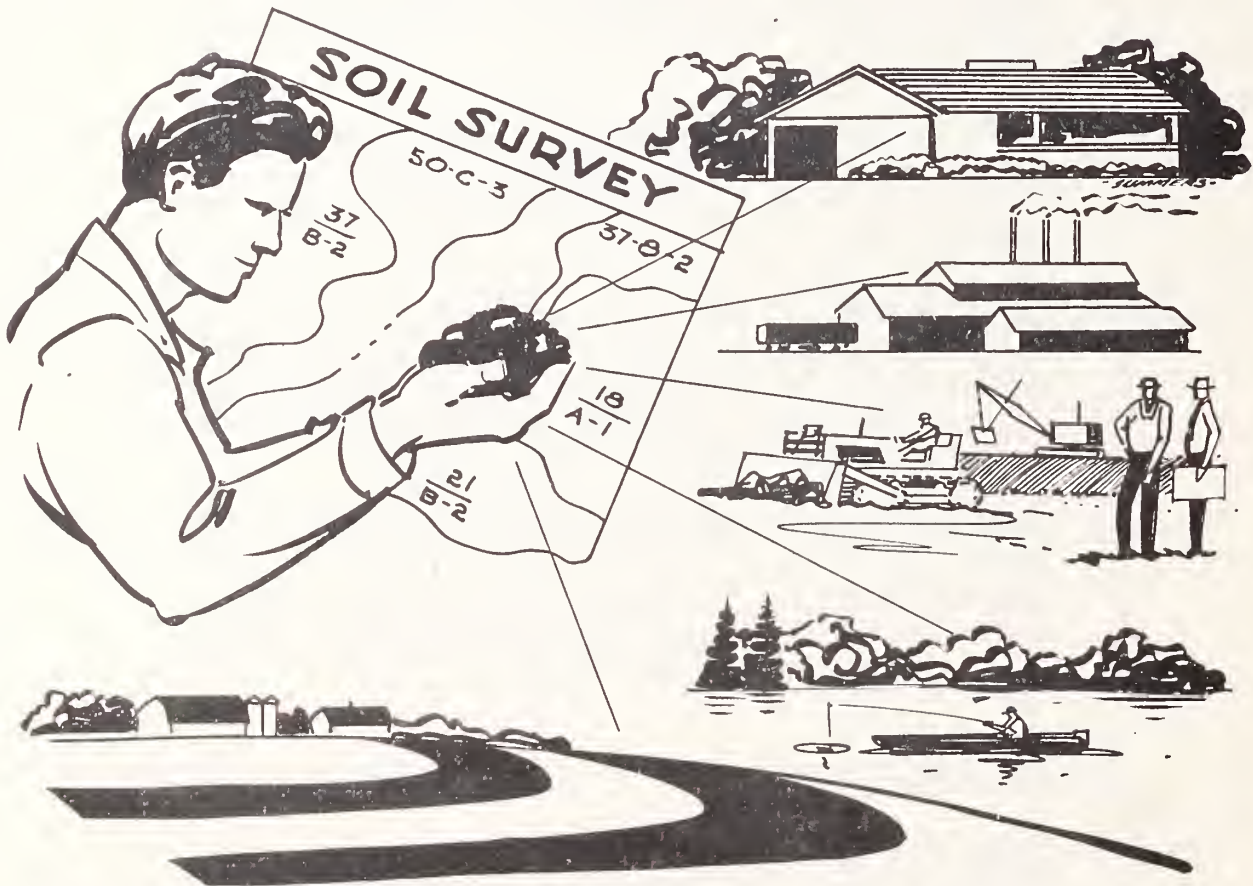
Land Limited In Use - Generally Not Suited For Cultivation

- Class 5 Soils in Class 5 have little or no erosion hazard but have other limitations that prevent normal tillage for cultivated crops. They are suited for pasture, range, woodland, and wildlife. There are no Class 5 lands in the District.
- Class 6 Soils in Class 6 have severe limitations or hazards

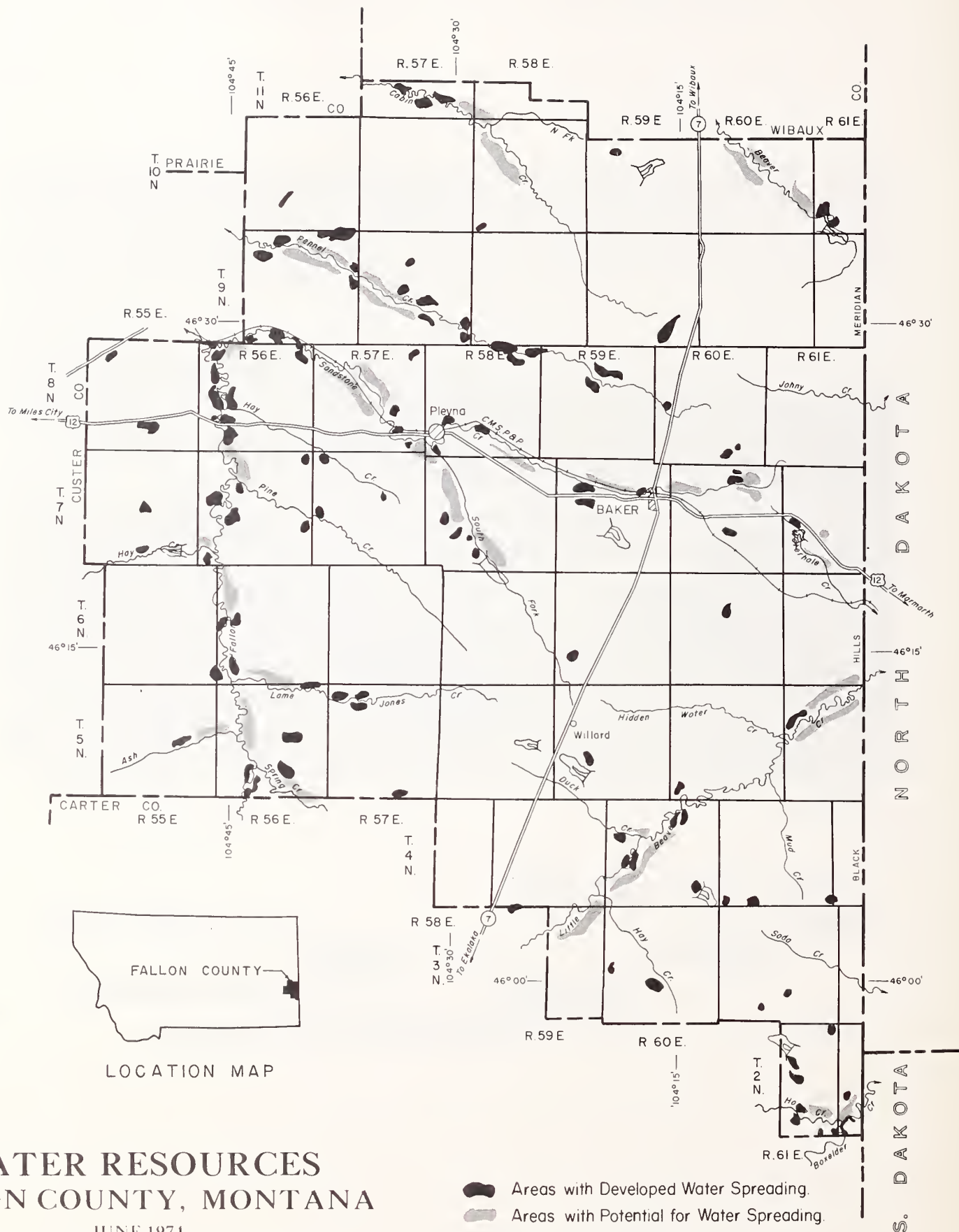
that make them unsuited for most cultivation. They are suited generally for pasture, range, woodland and wildlife.

Class 7 Soils in Class 7 have very severe limitations or hazards that make them generally unsuited for cultivation. They are suited for range, woodland and wildlife.

Class 8 Soils and land forms in Class 8 have limitations and hazards that prevent their use for cultivated crops, pasture, range, or woodland. They may be used for recreation, wildlife and water supply.







WATER RESOURCES

Fallon County has drainages that run in all directions; however, the primary drainage pattern is toward the northwest. The southeast portion of the county drains toward the northeast.

The major drainage features of Fallon County are O'Fallon Creek, Sandstone Creek, Little Beaver Creek and Box Elder Creek. O'Fallon Creek drains the eastern area of the county and leaves the county northeast of Plevna. Sandstone Creek flows northwest across the central area of the county through Baker and Plevna to its confluence with O'Fallon Creek near Ismay in Custer County. The headwaters of Little Beaver Creek are in Carter County near Ekalaka. Little Beaver Creek flows northeast across southeastern Fallon County before entering North Dakota. Box Elder Creek also heads in Carter County, and it flows through the extreme southeastern corner of Fallon County, just crossing the corner of South Dakota. Cabin Creek and Pen-nel Creek drain the northwestern portion of the county, flowing in a northwesterly direction.

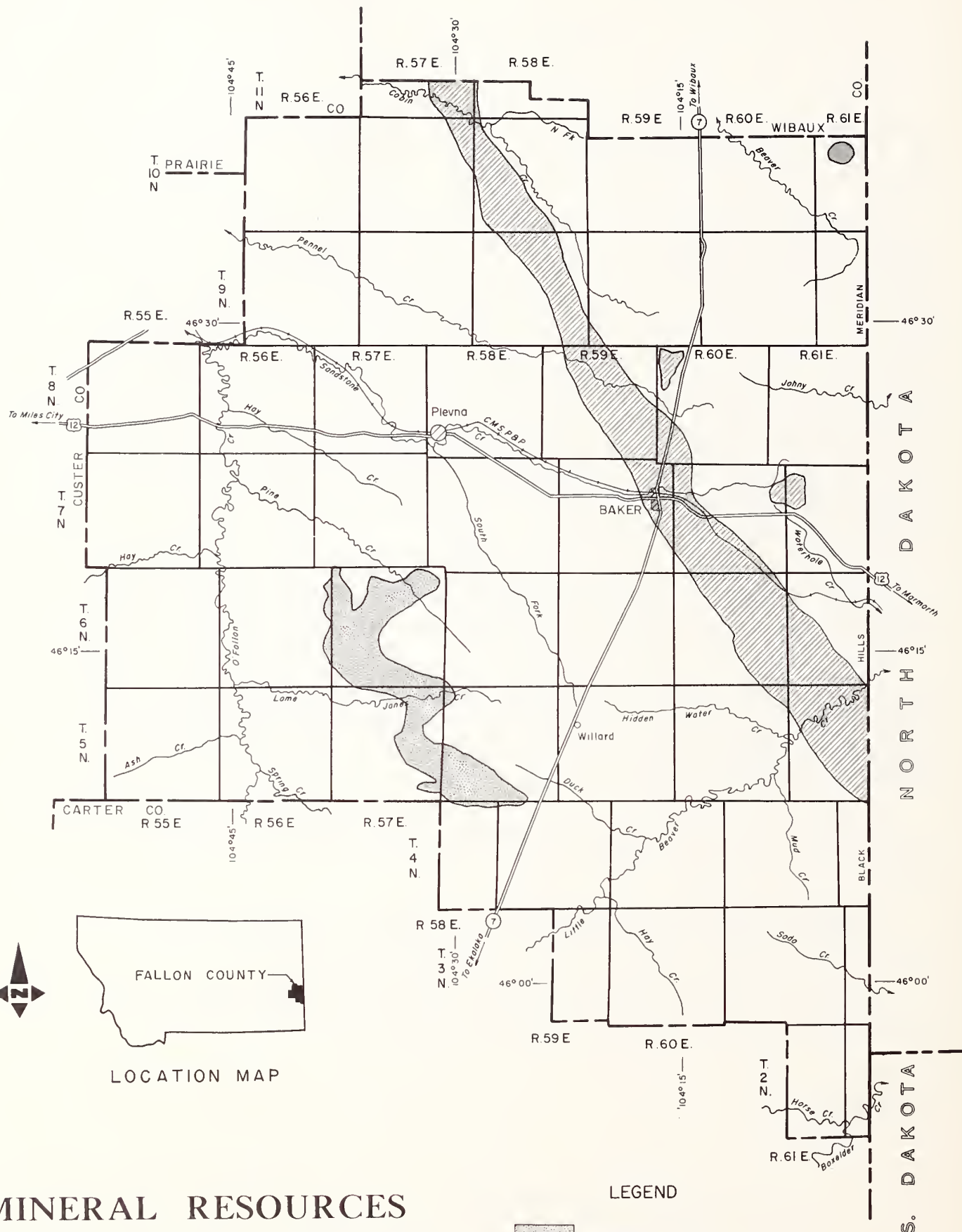
There are no irrigation districts in Fallon County but the use of surface water is widespread for agricultural purposes. Approximately 3,000 acres benefit by using waterspreading diking systems.

Ground water is used extensively in the county for stock and domestic purposes, and in most areas the only source of water is from wells. As of January 1970, the Montana Bureau of Mines and Geology has 746 appropriations for wells and 228 applications for springs on file for Fallon County.

Baker obtains water for municipal use from four drilled wells, and the town of Plevna obtains municipal water from two drilled wells.

A ground water central area includes most of Fallon County. Its primary geological feature is the Cedar Creek Anticline.

The purpose was to determine the effect the oil industry is having on the artesian wells in the area.



MINERAL RESOURCES FALLON COUNTY, MONTANA

JUNE 1974

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION
SOURCE MATERIALS : AMS TOPOGS, NL 13-5 & NL 13-4

LEGEND

- Strippable Coal
- Oil and Gas
- Uranium Oxide Deposits

MINERAL RESOURCES

At the present time, Fallon County's mineral industry is sustained by petroleum and natural gas. Most of the approximately 200 productive oil wells in the county are in fields discovered in the 1950's. The gas industry in Baker operates about 250 wells in the surrounding area.

The original amount of resources in the county's oil fields was almost 200 million barrels, not including another 92 million barrels in Pine Field, which is shared by three counties. The amount of oil pumped from Fallon County, excluding Pine Field, until January 1971, was 102,284,000 barrels. This leaves an oil reserve in the county's fields of about 94 million barrels.

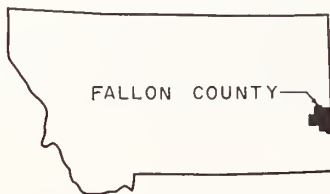
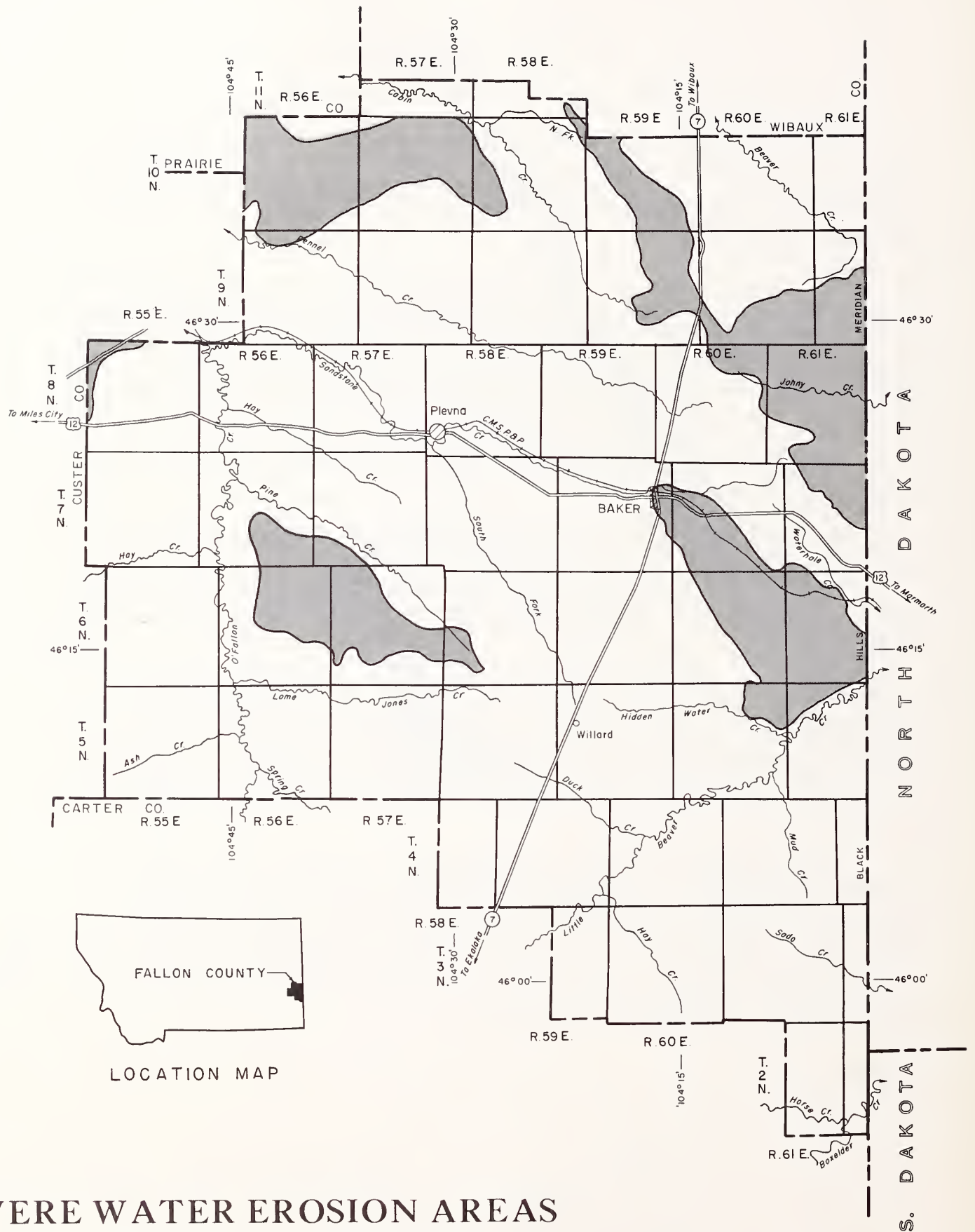
The oil produced in Fallon County is a medium weight crude of about 33.3 API gravity.

The total production of gas in 1970 was 6,077,333 m.c.f.

The oil and gas industry's official estimate predicts at least twenty more years of concentrated mineral fuel mining activities in the area.

Baker is located in the Fort Union coal region of Montana, a large field of coal stretching from Wyoming to Canada and over into the Dakotas. Fallon County is underlain with lignite primarily, which is a soft moist coal and has a low heat capacity. It has the advantage of having a low sulphur-bearing percentage, one per cent or less.

Many pollution control laws require a sulphur content of less than one per cent. It has been estimated that there are 2,551 million short tons of lignite in Fallon County. At the present time the combination of low quality, large overburden and remoteness from demand centers make most of the lignite in Fallon County economically unfeasible to mine. Only about 150 million tons are considered economically strippable at this time.



LOCATION MAP

SEVERE WATER EROSION AREAS FALLON COUNTY, MONTANA


JUNE 1974

5 0 5 10 MILES

SCALE 1 : 500,000

TRANSVERSE MERCATOR PROJECTION
SOURCE MATERIALS : AMS TOPOGS. NL 13-5 & NL 13-8

LEGEND

 Severe Water Erosion

EROSION HAZARD MAP

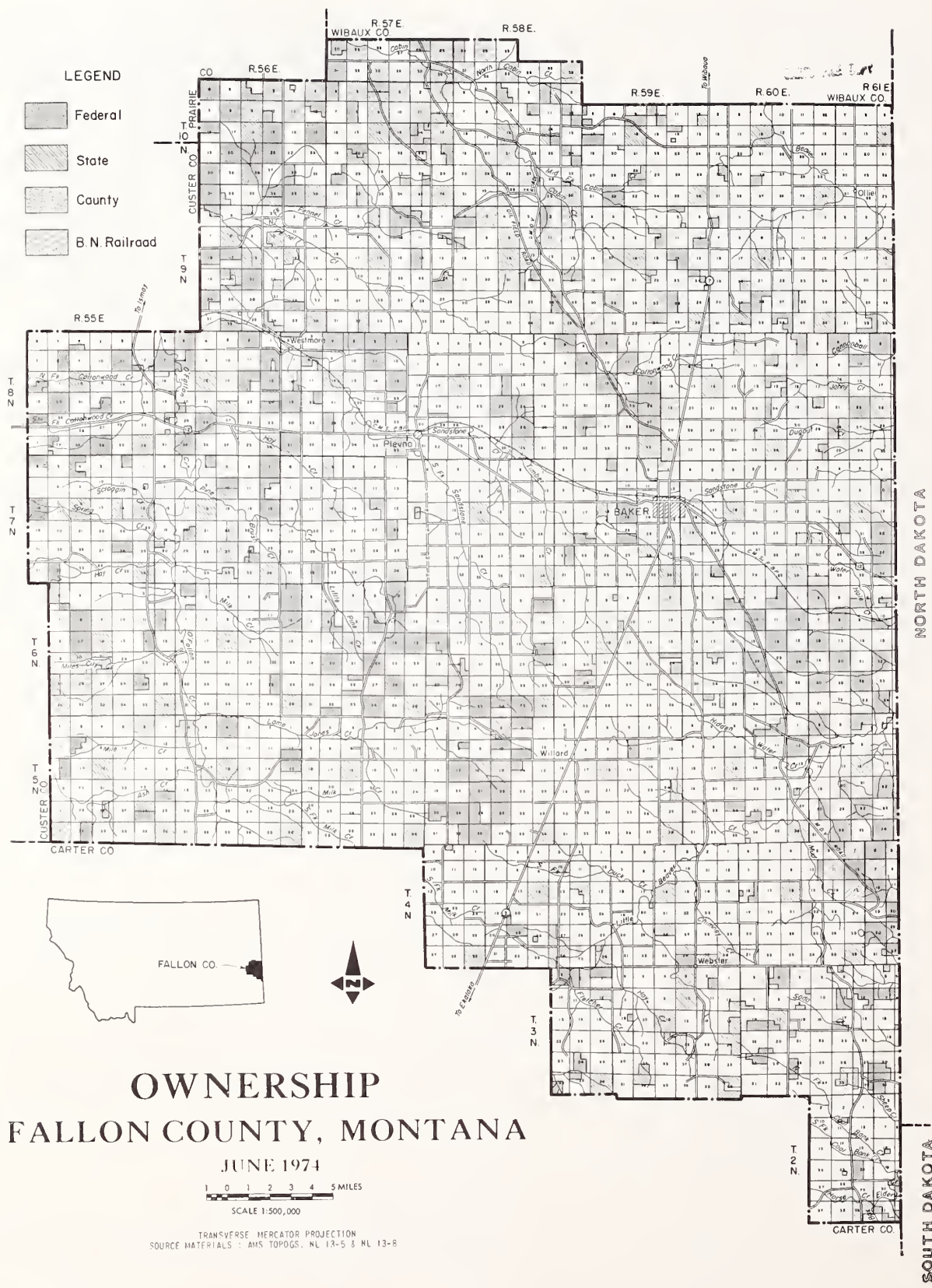
The very severe areas of water erosion are steep to very steep, severely eroded lands consisting of silty, sandy and clayey sedimentary beds, and erosive streamlands. These areas are subject to natural geologic erosion.

The severe areas of water erosion are steep soils on shale and sandstone uplands, including Class VIe land under cultivation and areas similar to and including thin breaks range sites. Sediment yield is principally from gully and sheet erosion.

The majority of the county falls in the moderate erosion hazard classification. It includes undulating to hilly, deep, well-drained soil, including excessively drained soils on steeper slopes. Sediment yield is principally from sheet and streamland erosion.

Land classified as having slight erosion is found along the major drainages of the county. They are level to nearly level soils found along valley bottoms, terraces, and upland benches. Sediment yield is principally from sheet erosion.

Wind erosion is found in all parts of the county. The primary areas follow the land use by cultivation. Soil types and conservation methods greatly affect the severity of this erosion.



LAND OWNERSHIP

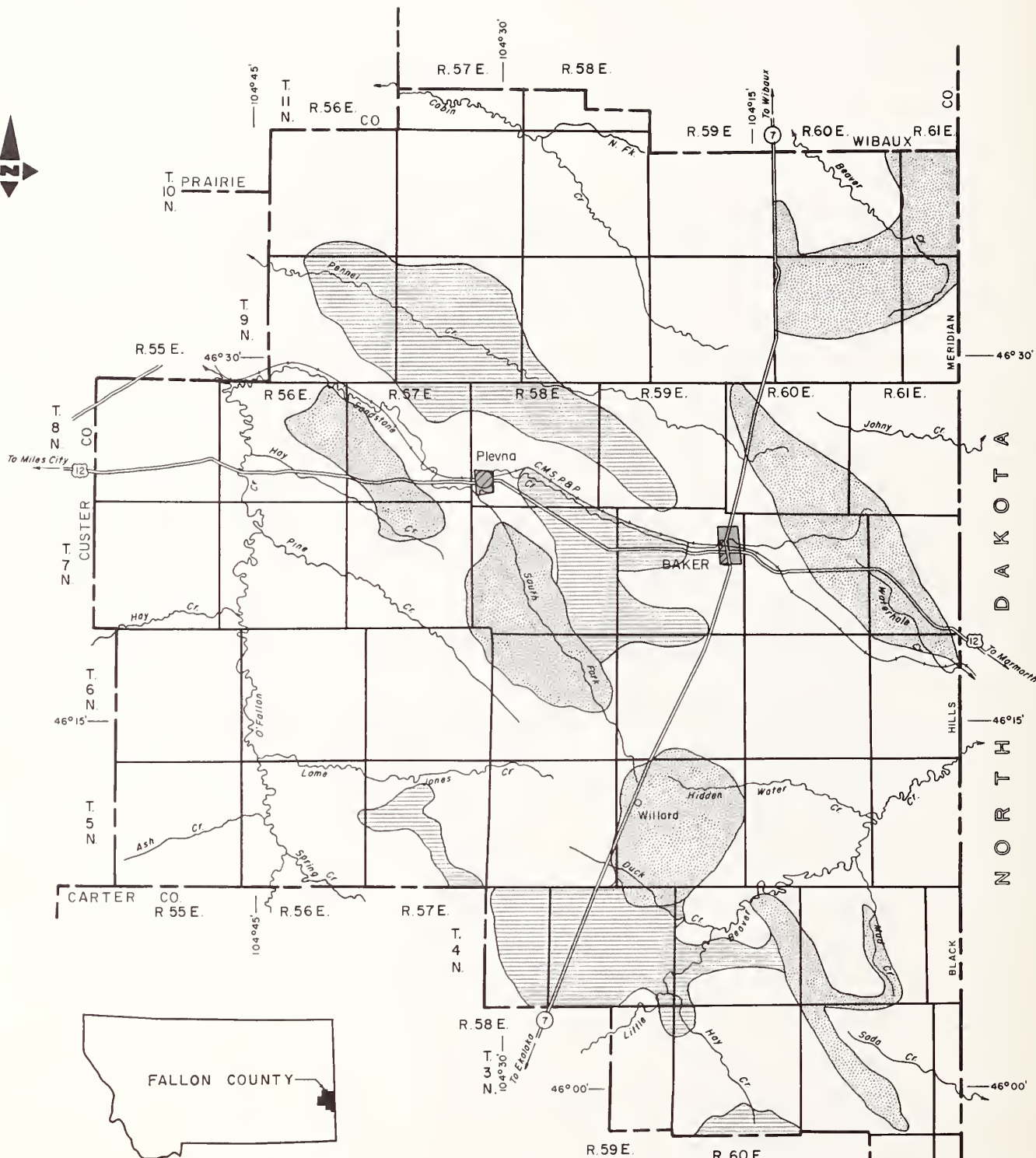
The land ownership pattern of the district is shown on the land ownership map. The approximate ownership of this land is as follows:

	Acres	
Private	819,484	78%
State of Montana	68,094	7%
Bureau of Land Management	122,621	12%
BN Railroad	34,921	3%

Private ownership accounts for about 91% of the land in the district. Burlington Northern Railroad owns about 3% of the private land.

The Bureau of Land Management administers about 12% of the land in the district that is scattered throughout the county.

State lands (7%) are commonly found in sections 16 and 36 of each township. These lands are commonly leased to local operators for ten year periods.



LOCATION MAP

LAND USE FALLON COUNTY, MONTANA

JUNE 1974

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION
SOURCE MATERIALS: AMS TOPOGS, NL 13-5 & NL 13-8

LEGEND

- Over 75% Range
- Over 75% Cropland
- Mixed Range & Cropland
- Urban Buildup

LAND USE

There are 1,045,120 acres of land in the district. Of this total 1,032,233 or 99 percent is used for the production of crops and livestock. The following table shows a breakdown of various land uses as shown in the 1967 Conservation Needs Inventory.

	<u>Acres</u>	<u>%</u>
Rangeland	773,798	74
Dry Cropland	233,213	22
Pasture & Hayland	20,000	2
Forest Land	760	
Other Land	4,464	
Urban & Built Up Areas	11,347	1
Small Water Areas	1,540	

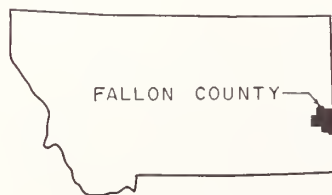
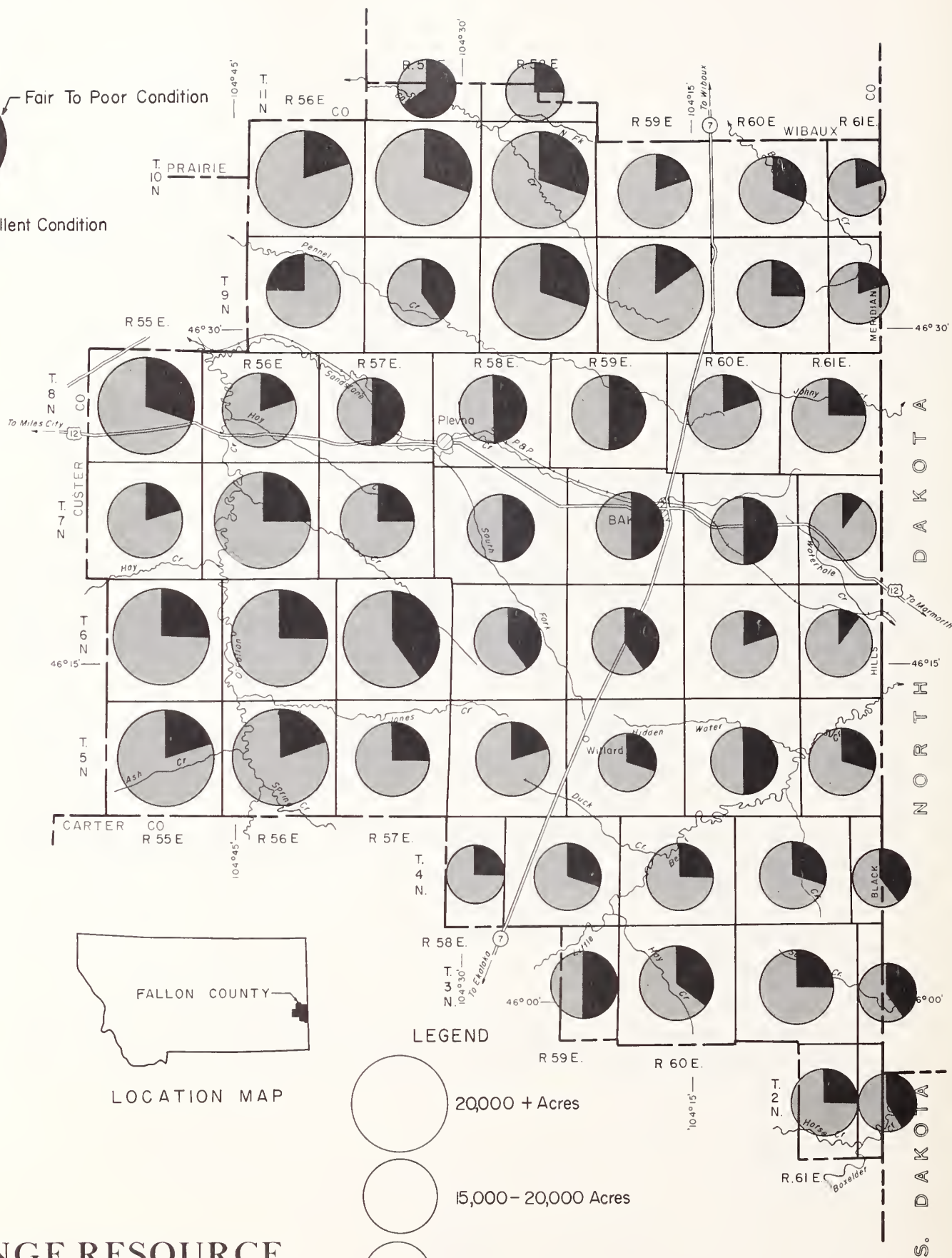
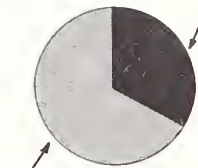
Rangeland constitutes the largest single land use in the District. These lands provide the primary resource for supporting the livestock industry. Dry cropland is used primarily for the production of cereal grains produced under an alternate crop-fallow system. Hay and Pasture consists of tame grasses used to supplement livestock feed and forage and are used interchangeably depending on the need.

Other land includes farmsteads, farm roads, rural non-farm residences, investments, county churches, schools, cemeteries, and small stock ponds and reservoirs less than two acres in size.

Urban and built-up areas in the District include towns and other built-up areas of more than ten acres such as highways, roads, rail roads, and industrial sites.

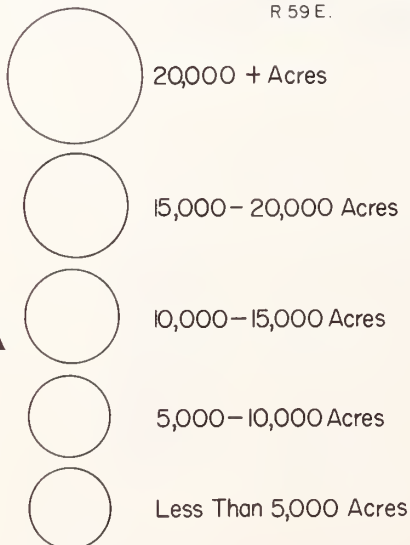
Small water areas are ponds, reservoirs and lakes that are from two to forty acres in size.

The District has not experienced any major land use changes in the past fifteen years. During the period from 1958-1967, there was a slight decrease in cropland and a corresponding increase in pasture acreage.



LOCATION MAP

LEGEND



RANGE RESOURCE FALLON COUNTY, MONTANA

JUNE 1974

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION
SOURCE MATERIALS : AMS TOPOGS. NL 13-5 & NL 13-R

RANGELAND RESOURCE

Rangeland is made up of soils on which the plant cover is a combination of native grasses, forbs and shrubs. These lands provide forage for livestock, wildlife habitat, protection of soil from erosion, watersheds, recreation opportunities, natural beauty, and areas for future development. There are approximately 780,540 acres of rangeland in the District accounting for 75% of the land use. Of this total 598,939 acres or 77% are under private ownership; 122,621 acres or 16% are Federal lands administered by the Bureau of Land Management; and 58,980 or 7% are under State ownership.

Range condition is the present composition of vegetation of a range site in relation to the potential plant community for the site. Range condition studies show that approximately 70% of the range in the District is in good to excellent condition and 30% is in fair to poor condition. Heavy use over a long period of time reduces the vigor of the plants and may result in their elimination. Grazing animals are selective and grazing pressure is heaviest on the most palatable plants, which are eventually grazed out if overuse of a range is prolonged.

Cost and return studies of different levels of range management carried out by ranchers throughout the area proves that good range management has a tremendous economic impact. Range in good condition will net about \$1.15 more return per acre than fair condition range.

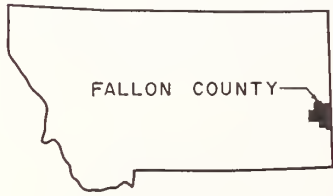
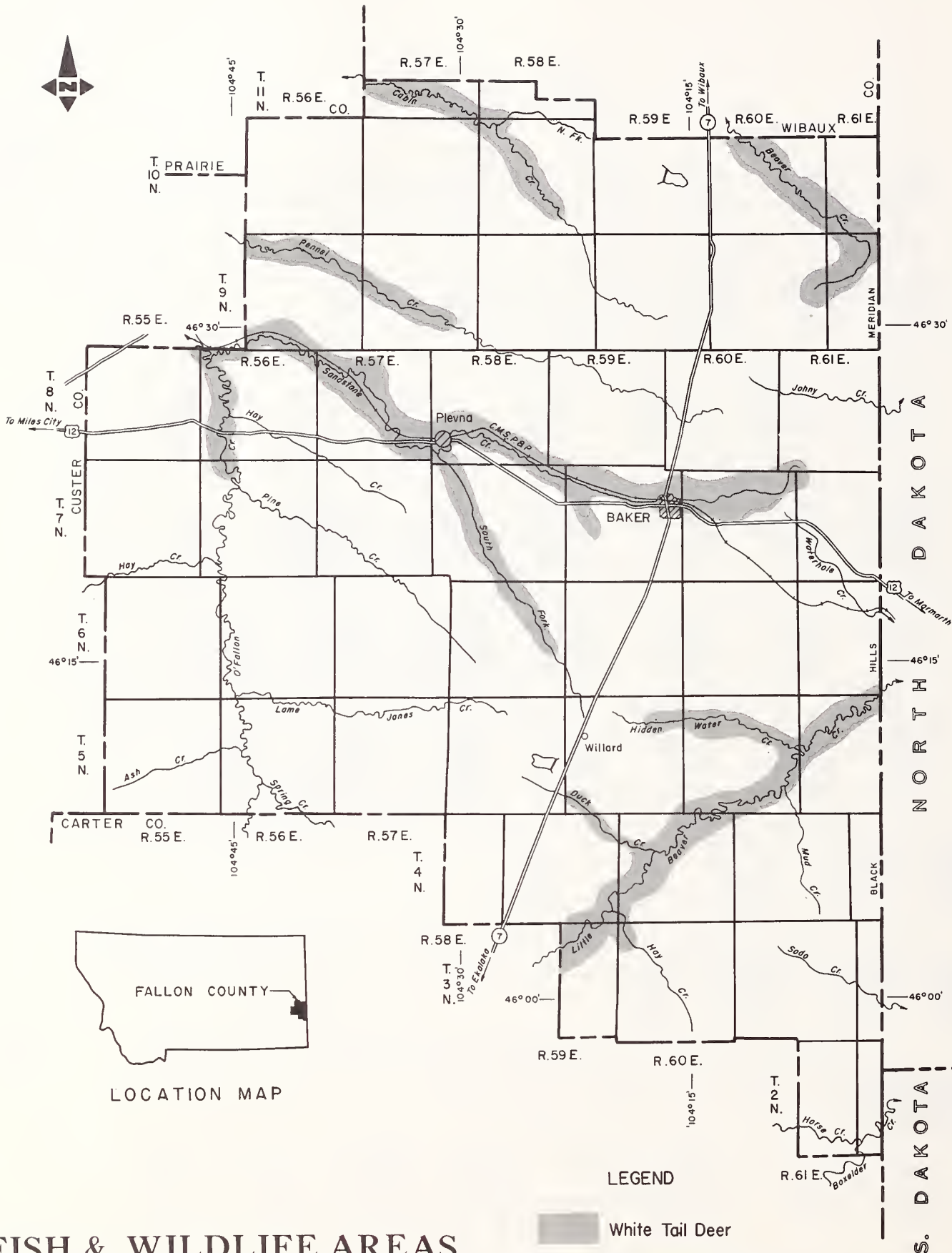
Approximately 15% of the rangeland is Class II and III land and is suitable for cultivation; however, many of these areas occur in small isolated or irregular tracts that are not presently economical to farm.

In addition to rangeland there are approximately 20,000 acres of tame pasture, one acre to every 43.5 acres of range. Tame pastures consist of introduced tame grasses to provide supplemental grazing.

The raising of cattle and sheep are the main livestock enterprises. As shown in the following table, livestock numbers have shown a gradual increase since 1964.

	<u>1974</u>	<u>1972</u>	<u>1970</u>	<u>1968</u>	<u>1966</u>	<u>1964</u>
Cattle & Calves	56,300	46,300	40,000	41,000	41,000	37,700
Sheep & Lambs	6,500	9,000	10,800	9,500	9,400	11,000
TOTAL	61,800	55,300	50,800	50,500	50,400	48,700

SOURCE: Montana Agriculture Statistics



LOCATION MAP

LEGEND

- White Tail Deer
- Fishing Access Areas

FISH & WILDLIFE AREAS FALLON COUNTY, MONTANA

JUNE 1974

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION
SOURCE MATERIALS : AMS TOPOGS. NL 13-5 & NL 13-8

Note : Mule Deer, Antelope, and Upland
Gamebirds are Commonly Found
Throughout the District.

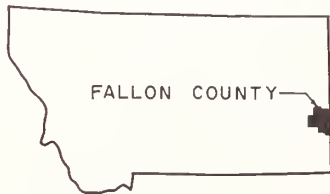
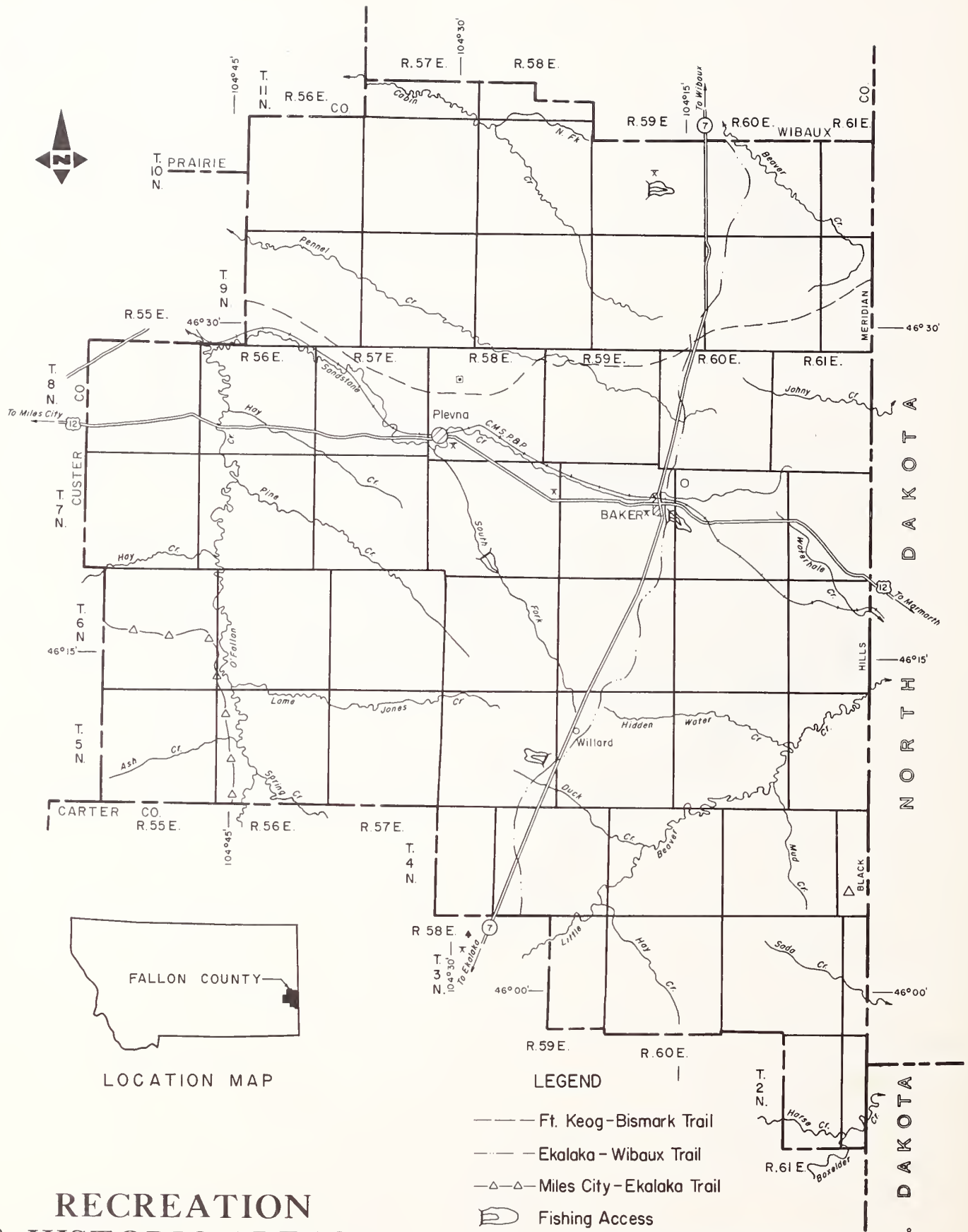
WILDLIFE

Sport fishing in Fallon County is supported entirely by a large complex of farm and ranch ponds. Fallon County has 20 ponds that are intensively managed. They average about 6 acres in size. Since they are warm water ponds the predominant species are NorthernPike, Large-mouth Bass and Walleye Pike. Management of these ponds is difficult due to winter kill problems, degradation of pond habitat and decrease of depth due to siltation.

With the planned completion of Baker Lake Watershed Project the present Baker Lake can be renovated to provide a good recreation center.

South of Plevna, Montana, on the South Sandstone Creek, a combination recreation-waterspreading pond is being planned. This will provide an excellant habitat for NorthernPike and Perch. This dam will provide water for about 600 acres of waterspreading.

Deer and antelope are abundant throughout the county. Upland game birds, with the exception of Chinese Pheasants, are plentiful and provide many hours of hunting. Fallon County is in the central flyway for the migratory game birds, but due to lack of open water, hunting is limited to the early part of the season. Hunting has become a major industry for this portion of the state.



LOCATION MAP

RECREATION & HISTORIC AREAS FALLON COUNTY, MONTANA

JUNE 1974



TRANSVERSE MERCATOR PROJECTION
SOURCE MATERIALS : AMS TOPOGS. NL 13-5 & NL 13-8

LEGEND

- Ft. Keog-Bismark Trail
- Ekalaka-Wibaux Trail
- △—△ Miles City-Ekalaka Trail
- Fishing Access
- Proposed South Sandstone Recreation Area
- △ First Oil Well
- First Gas Well
- ✕ Picnic Areas
- ◆ Medicine Rocks State Park
- Monument To Fritz

RECREATION

The demand for recreation on a national as well as local scale is an ever-increasing thing. As younger people, more recreation-minded, take more part in community affairs, there will be more interest in this direction.

Geographic location in relation to tourist routes, climate, topography, ownership patterns, location of population centers, accessibility by public and private transportation and facilities available or potentially available are important factors to be considered when assessing recreation potential.

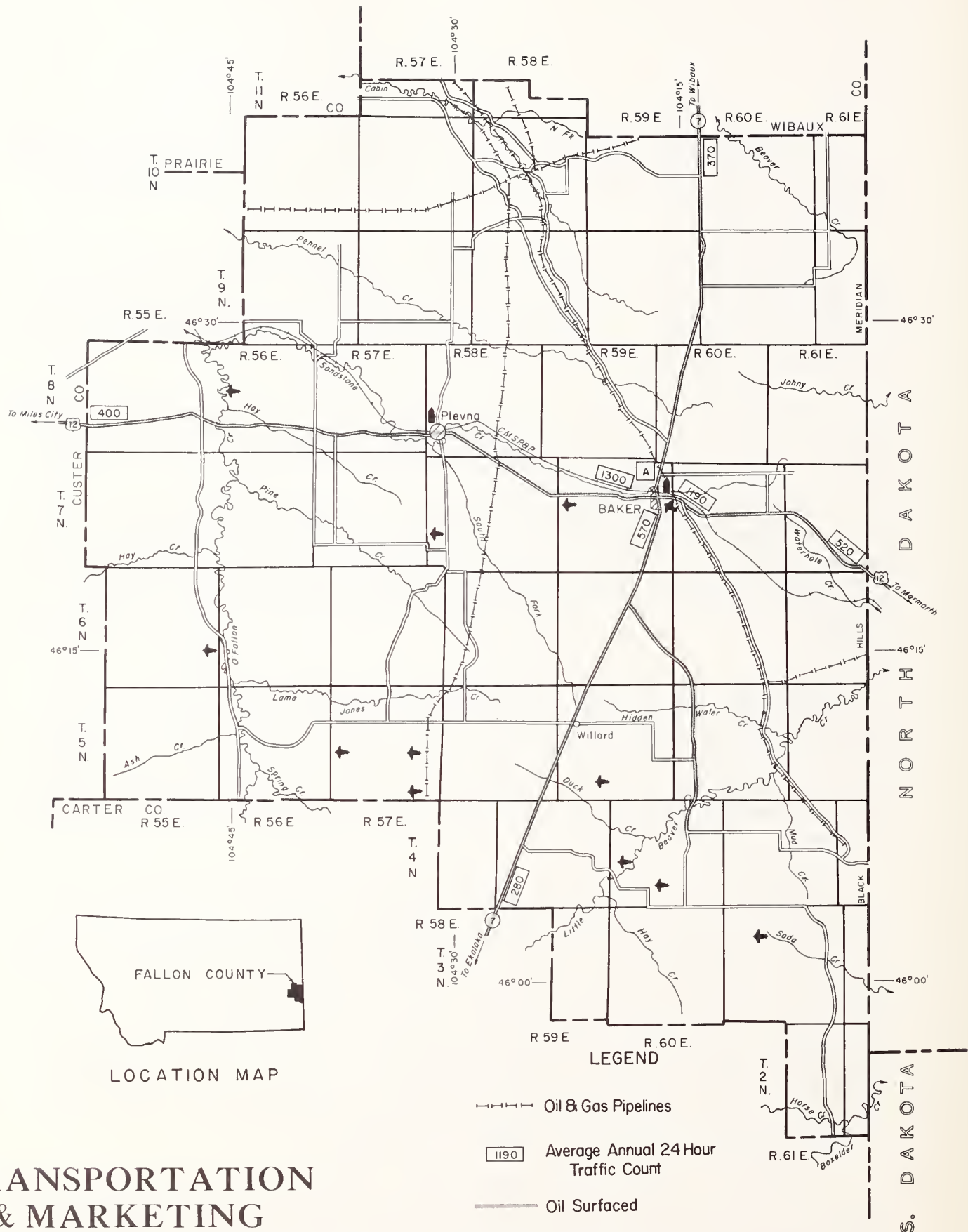
The different types of recreation available or potentially available and the number of people who can avail themselves without detrimental effects to the resources also must be considered.

The Appraisal of Potential Outdoor Recreation Developments in Fallon County, prepared by the TAP panel, is probably the best available report on recreation in Fallon County. With the development of the South Sandstone Group project and the Baker Lake Development, a definite upgrading of the appraisal of water-based recreation will be needed.

With an ever-increasing ownership of off-the-road vehicles such as four wheel drive units or snowmobiles, winter recreation has become a much more important part of the overall recreation activities in Fallon County. The Baker Lake has become an important recreation area for snowmobiles based in Baker. Hunting of predators and other non-game animals in the surrounding areas is another offshoot of the increased ownership of winter recreation vehicles.

Access to land and water areas for recreational purposes is a problem that will need attention. In the past five to ten years recreation vehicles have increased rapidly in number. Snowmobiles have increased in numbers at a rate comparable to the other northern states. Land ownership patterns in Fallon County are such that there are no large areas of public lands to be used for recreational purposes. Presently, access is arranged on a person-to-person basis. A marked increase in need for land for recreational use will cause a need for some other method of obtaining recreational access. This might be taken care of as some type of cost-sharing practice or in tax relief, or by outright purchase of land for recreation.

The geographical location of Fallon County and the total lack of public transportation would indicate that recreation now and in the near future will be based on the needs of residents. The number of people now living here probably will not increase much due to a limit in the number of jobs available. In turn this precludes commercial developments of any great size because of the relatively small population.



TRANSPORTATION & MARKETING FALLON COUNTY, MONTANA

JUNE 1974

5 0 5 10 MILES

SCALE 1:500,000

TRANSVERSE MERCATOR PROJECTION
SOURCE MATERIALS : AMS TOPOGS. NL 13-5 & NL 13-8

TRANSPORTATION AND MARKETING

Transportation and marketing are an integral part of the modern production system. Efficient and rapid movement of the people, raw materials, and finished goods to and from an area is essential to community development.

Transportation

Highway transportation in the District includes Highway 12 running east-west through the district. State Highway 7 running north-south connects Baker with Interstate 94 at Wibaux. In addition there is approximately 730 miles of secondary county roads in the district.

Freight rail service in the district is supplied by the Chicago, Milwaukee, St. Paul and Pacific Railroad Company. The nearest rail passenger service is an AM-TRAC stop at Glendive on an alternate day service.

There are no commercial airports in the district, however, daily air service and connections to nationwide airlines are available at Glendive and Miles City. A charter flight service is available at the City-County airport in Baker.

Marketing

The majority of the small grains are marketed through local elevators and then shipped by rail or truck to terminal markets both east and west. Boxcar shortages in the past have resulted in marketing delays. The total commercial storage available in the district is estimated at 478,000 bushels. On-farm storage is estimated at more than 1.1 million bushels.

Livestock is generally marketed through the local auction yard or sold directly to feeder buyers.

DRY CROPLAND

The major crops grown in the district are wheat, barley, oats, corn and alfalfa hay. Other crops include small acreages of safflower, flax and rye.

Following is a tabulation of crops by acres for 1973.

<u>CROP</u>	<u>ACRES HARVESTED</u>
Winter Wheat	25,600
Durham Wheat	400
Other Spring Wheat	21,700
Barley	27,700
Oats	7,500
Alfalfa Hay	30,300
Corn	1,200

SOURCE: Montana Agricultural Statistics

There has been a trend in the past seven years to devote less acreage to wheat. Wheat acreage decreased by approximately 21% from 1965 to 1973 due primarily to changes in farm programs.

Dryland crop yields vary considerably from year to year due to variations in rainfall and temperatures. Low rainfall received at the right time and coupled with cool temperatures can produce comparable yields of crops equal to years having five to six inches more rainfall.

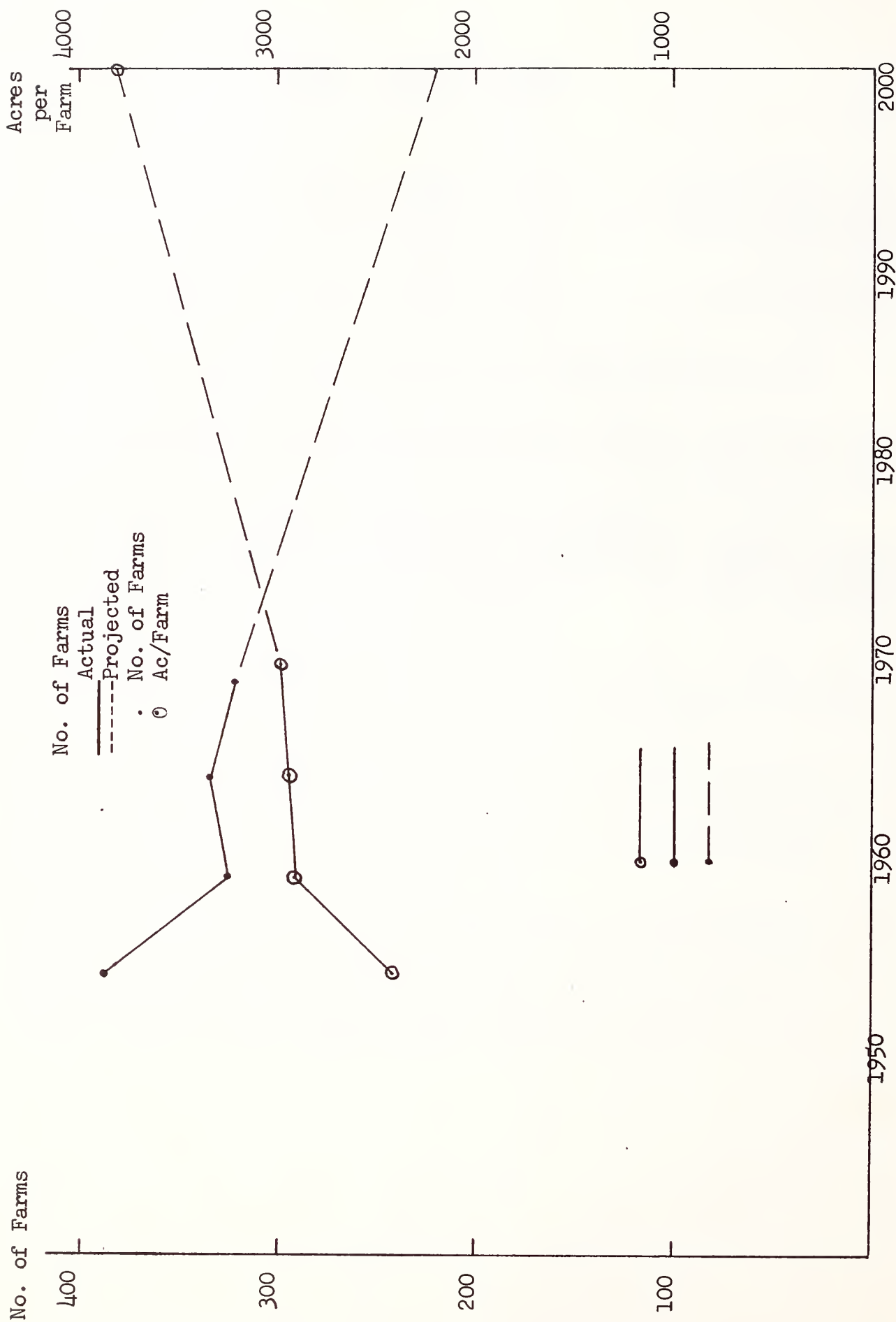
Conversely, years having 12 to 14 inches of precipitation (a normal year) may produce poor yields if the moisture falls as a series of light showers. Hail storms are also a problem in the district. Nearly every year crops in some part of the district receive hail damage. The following table shows the variability of crop yields in the district over a period of years.

	<u>1964*</u>	<u>1967*</u>	<u>1970*</u>	<u>1973</u>
Growing Season Precip.	11.93	9.11	11.23	
Winter Wheat(bu/ac)	23.5	32.5	26.7	33.0
Spring Wheat(bu/ac)	15.0	20.0	17.7	25.0
Durham Wheat(bu/ac)	9.0	17.0	17.5	28.0
Barley(bu/ac)	25.5	30.0	27.7	41.0
Oats(bu/ac)	28.5	32.4	30.0	43.0
Alfalfa Hay(T/ac)	1.12	1.16	1.39	1.62
Corn(T/ac)	2.4	5.0	4.3	7.0

*Data taken from Montana Agriculture State Bulletins

The typical dryland cropping system used in the district is alternate small grain fallow. Occasionally corn will be substituted for the fallow operations.

A number of producers are using commercial fertilizers to increase yields. Both nitrogen and phosphate are being used in blends of 11-48-0 and 18-46-0 applied at an average rate of 80 pounds per acre.



Source: Montana Agricultural Statistics - Projections M.S.U.
Agricultural Experiment Station, Oct. 1966

FARMS
Size and Tenure

The number of farms in the District has steadily declined during the past fifteen years with the average size of farms increasing proportionally. During the 1954-69 period, the District experienced a 16% decline in number of farms. Projections indicate a continued gradual decline.

Land values have been increasing steadily. This has been beneficial to established farm operators since it increases their net worth, giving them greater borrowing power. This is shown by the fact that the average value of land and buildings per farm increased approximately seven per cent per year from 1964 to 1969. The 1969 census shows the average value of land and buildings to be \$125,695 per farm. This has increased the difficulty for young men to become established in farming. The average age of farm operators in this district is 48.9 years.

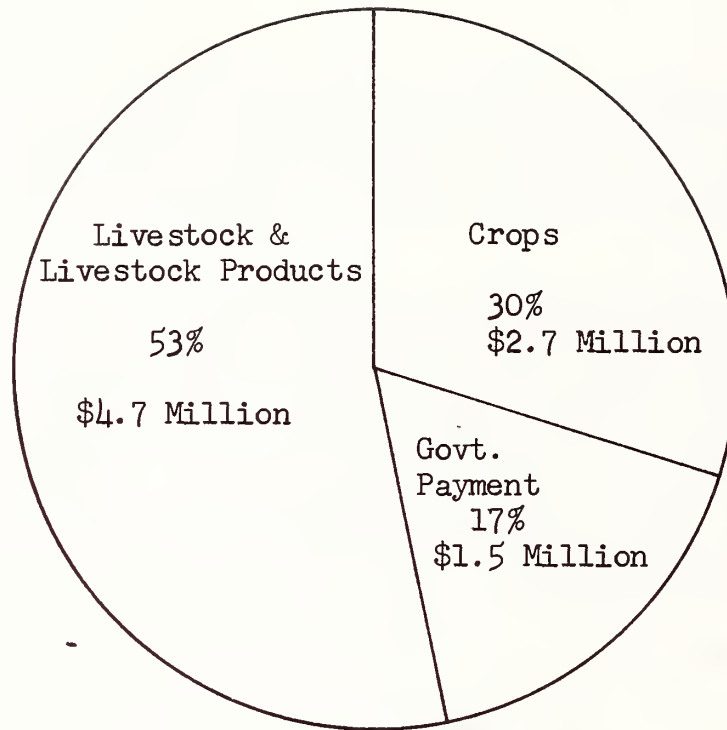
Ownership of farms is as follows(1969):

Full Owners	107
Part Owners	181
Tenants	33

The most common type of farm operation is a combination cash grain and livestock enterprise.

Shown below are the number of farms by type of product reported:

	<u>No. of Farms</u>
Cattle & Calves	260
Hogs	80
Sheep	42
Horses	151
Wheat	254
Barley	156
Oats	132
Field Corn	19



1971 Montana Agricultural Statistics

FARMS BY ECONOMIC CLASS

<u>Class</u>	<u>Sales</u>	<u>No. of Farms</u>	<u>% of Farms</u>
I	\$40,000 & over	30	9
II	20,000 - 39,999	77	24
III	10,000 - 19,999	91	28
IV	5,000 - 9,999	63	20
V	2,500 - 4,999	27	8
VI	50 - 2,499	9	3
Part - Time		22	71
Part - Retirement		2	1

AGRICULTURAL INCOME

Agriculture is the second largest and most stable industry in the District.

Cash farm receipts from the sale of agricultural products rose from 7.7 million dollars in 1968 to 8.8 million dollars in 1971. During this period, livestock and livestock products have accounted for approximately 53% of the total cash farm receipts.

The following table shows the average cash receipts per farm as compared to the average for the state:

	1968	1969	1970	1971
Cash Receipts/farm(Co. Average)	\$23,007	27,172	26,189	26,632
Cash Receipts/farm(State Average)	21,316	23,007	25,955	27,582

In 1971 farms in the district ranked 36th among all Montana counties in average cash receipts per farm.

The distribution of farms by economic class shows the number of farms by sales grouping. It is interesting to note that only 33% of the farms has sales exceeding \$20,000. In addition 24% of the farm operators reported 50 days or more of off-farm work.

POPULATION DISTRIBUTION BY AGE GROUPS

FALLON COUNTY

	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>Change 1940 - 1970</u>
Under 5	332	463	558	345	+13
5 - 19	1,216	988	1,194	1,386	+170
20 - 34	851	830	742	698	-153
35 - 44	362	466	492	483	+121
45 - 54	436	297	413	411	-25
55 - 64	331	328	244	369	+38
65 +	191	288	354	358	+167
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	3,719	3,660	3,997	4,050	+331

PERCENT DISTRIBUTION BY AGE GROUPS

Under 5	8.9	12.6	14.0	8.5
5 - 19	32.7	27.0	29.9	34.2
20- 34	22.9	22.7	18.9	17.2
35 - 44	9.7	12.7	12.3	11.9
45 - 54	11.7	8.1	10.3	10.2
55 - 64	8.9	9.0	6.1	9.1
65 +	5.1	7.9	8.9	8.8

Source: U.S. Census of Population

POPULATION

From 1960 to 1970 the population of Fallon County increased by 53 persons, while 559 persons, or more than ten times the net increase, moved out of the area. The losses in both instances, reflect the scarcity of economic opportunities to retain persons.

The town of Baker increased from 35% of the county in 1940 to almost 64% of the population in 1970.

	1940	1950	1960	1970
Montana	559,456	591,024	674,767	694,409
Fallon County	3,719	3,660	3,997	4,050
% of State	.66	.62	.59	.58
Baker	1,304	1,772	2,365	2,584
% of State	.23	.30	.35	.37
% of County	35.06	48.42	59.17	63.80

The population composition for Fallon County for the past 30 years is indicated by the chart on the opposite page. An array of this type is useful in that it indicates what is happening in the various age groups of the population. For example, it indicates what trends are being established for school age children, who represent a major expenditure and concern of government. It further indicates the loss of those in the labor force as they move elsewhere to seek employment. This again is a concern to government. An interesting point is that the data indicates the aging of the total population. For example, in 1940, only one person in 20 was 65 or over. Presently this figure has risen to about one out of every 11 people. Information as this affects the levels and types of services government is expected to offer.

INCOME

Based on the poverty definition as used in the 1970 census report, forty-six or 12.7 per cent of all families in Fallon County had incomes less than poverty level. This is slightly higher than the surrounding counties of Richland and Dawson. Seventy-seven families or 21.3 per cent had incomes less than 125% of poverty level. Most families in this category spend virtually all of their income on the necessities of food, shelter, clothing, transportation, and medical care.

Family Income 1969

	BAKER		NON FARM FAMILIES		RURAL FARM FAMILIES	
	#	%	#	%	#	%
Under \$3000	57	8	7	10	72	30
3,000-5,999	109	15	10	14	62	26
6,000-8,999	139	9	19	26	49	20
9,000-11,999	236	32	26	36	31	13
12,000-14,999	126	17	10	14	11	5
15,000-24,999	50	6.9	0	0	11	5
Over 25,000	0	0	0	0	5	1
TOTAL	717	100%	72	100%	240	100%

Median Income	\$9,807	\$8,000	\$5,500
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SOURCE: U.S. Bureau of Census - 1970

Fifty-one per cent of all families in the district are rural farm families. Although the median income for rural families is lower than for non-farm families, the number with income below the poverty level in this group is lower than 8.1%.

EMPLOYMENT

Nearly one half of the labor force is directly employed in agriculture and a large portion is engaged in service to agriculture. The distribution of employment is shown in the following table:

Employment By Industry Groups

Agriculture	319
Mining	175
Construction	90
Manufacturing	21
Transportation	15
Communication	9
Utilities	80
Wholesale Trade	44
Retail Trade	263
Finance, Insurance & Real Estate	33
Services	333
Public Administration	71
Not Reported	0
<u>TOTAL EMPLOYMENT</u>	<u>1,453</u>

A detailed breakdown of employment by occupation is as follows:

Employment By Occupation

Professional Worker	131
Farmers and Farm Managers	266
Proprietors, except farm	132
Clerical and Sales	228
Craftsmen	184
Operators	164
Domestic Services	37
Service, except Domestic	196
Farm Laborers (wages)	53
Farm Laborers (unpaid families)	NA
Laborers, except farm	62
Occupations Not reported	0
<u>TOTAL EMPLOYMENT</u>	<u>1,453</u>

PUBLIC FACILITIES

There are two local government units within the boundaries of the District. A board of County Commissioners governs the functions of the county. The towns of Baker and Plevna are governed by the mayor-council form of government.

The District is served by two high schools and five elementary schools. The 1973-74 enrollment was 1077 students. At one time there were 47 elementary schools in the District.

There is a hospital and 2 resident physicians in the District.

Electricity and natural gas is provided to the towns of Baker and Plevna by Montana Dakota Utilities Company. Golden West Electric Cooperative provides electricity to rural areas. Nearly all residents throughout the county are provided with telephone service.

There are no television stations located in the District, but the area is served by KFLN radio.

TAXATION

The 1972 taxable valuation of Fallon County was \$20,714,643. This is a 3% increase over 1969 taxable valuation. A similar comparison for the state shows an 8.5% increase in taxable valuation during this same period. The following gives a breakdown of taxable valuations for 1972:

	<u>Taxable Valuation</u>	<u>% of Total</u>
Property other than Public Utilities	6,550,252	40.0%
Local Property of Public Utilities	448,376	.5%
Public Utilities Allocated by State	1,902,069	8.5%
Assessment of Net Proceeds	11,813,946	51.0%
TOTAL	<u>20,714,643</u>	<u>100.0%</u>

The total average mill levy for state, county and schools shows an increase of 50% during the past five years as shown in the following table:

<u>Year</u>	<u>Average Mill Levy for State, County, and Schools</u>
1969	87.81
1970	70.25
1971	71.00 + 6.10 + 11.13
1972	66.40 + 39.69
1973	80.71 + 55.78

The 1972 taxable valuation for all agricultural land and improvement was \$1,230,655 dollars, representing 15% of the total county valuation. The average taxable value of all agricultural land in the district is \$1.20 per acre. This compares with \$1.70 an acre for Wibaux County, \$1.59 an acre for Dawson County, \$2.33 an acre for Richland County and \$1.45 an acre for McCone County.

OBJECTIVES AND GOALS

The District will work toward:

1. Encouraging and assisting local people to formulate a plan for the orderly development of natural resources in the district using basic soils information as a tool in the decision-making process.

Goals: (1) Obtain a basic soil survey of the county.
(2) Carry out a continuous education and information program to reflect changing needs.

2. Including as part of the district information program, the total benefits of conservation planning to all landowners.

Goal: Program to achieve 85% of the land area under conservation plan by 1990.

3. Improving the range resources as outlined within the objectives, goals and time frame of the Montana Rangeland Resource Program.

Goals (to be obtained by 1980):

- (1) 80% of the pastures and native ranges will be operated under some form of intensive management planning.
- (2) 50% of the native ranges will be in excellent condition and 30% in good condition.
- (3) Native range and pastures will be producing 40% more usable forage.
- (4) 80% of the native ranges will have stockwater fully developed, plus the remaining 20% being developed.
- (5) Recreational use of the range grass will increase by 500%
- (6) The wildlife habitat on native ranges will be improved to provide a more stable wildlife population.

4. Monitoring water development projects to assure maximum beneficial use of water within each total watershed area, and maintain or improve water quality.

Goal: Review water development projects as needed to assure a proper balance of available water and developments within each drainage basin.

5. Maintain high air quality standard.

Goal: Discourage all projects that will reduce the air quality, including any practices that would decrease natural rainfall.

6. Encourage the development of the recreation potentials of the district with priorities placed on meeting the needs of local people.

Goal: Establish information programs to acquaint people with the recreation potentials available within the district.

PRIORITIES

The District will concentrate their efforts upon getting a soil survey which is a tool in treating the land to conserve water, prevent erosion and prevent or reduce the pollution of water, land, or air. The second major effort of the district will be to assist the local rangeland committee in improving the condition of the resource as outlined in the objectives and goals of the Montana Rangeland Resource Program.

SECTION V

PROBLEMS & OPPORTUNITIES

PLANNING AND DEVELOPMENT

The Conservation District can contribute significantly to the effectiveness of a resource planning program. The data on the natural resources of the district can help in determining the effects of both urban and agricultural uses on these resources. In resource planning and development, the apparent problems often are not the real problems but rather symptoms of several related problems. Each must be identified and dealt with in a manner that will treat the symptom and effect a cure. In this section the problems relate to each major resource, and the opportunities which follow list ways in which the District will attempt to solve these problems.

Problems

1. Not having soil survey and interpretative data on engineering properties, urban uses etc.
2. In the past there has been no current plan to guide development of the natural resources in the district.
3. Approximately 40 percent of the agriculture land area is presently not under a district conservation plan.
4. County-wide land use planning and regulations have not been developed.
5. There is a need for water use reservations; surface and ground-water.

Opportunities

1. Work toward getting soil survey report completed with present-day criteria.
2. Encourage formation of county-wide planning board to include the towns of Baker and Plevna.
3. Work closely with county planning board to insure coordination of programs and projects.
4. Provide to the planning board inventory data on natural resources for use in making sound planning decisions.
5. Provide one supervisor to serve as member of county planning board as per Montana statutes.

6. Develop committee structures of associate supervisors, youth boards, governing bodies, civic groups and other interested persons to forward the efforts of the district in all resource activities.
7. District employees will be used as available to assist in various phases of conservation planning.
8. District supervisors will encourage the development of conservation plans to neighbor farmers and ranchers.
9. Make use of other programs, such as the Great Plains Conservation Program to encourage the development of Conservation plans.
10. Establish planning priorities to reflect the treatment needs of the land.
11. Determine domestic, waterspreading, recreation, irrigation, stockwater, and other water-using potentials on the major drainages in Fallon County and make appropriate reservations of such.
12. Determine need for expansion of water control district and domestic needs of both urban and rural areas and make appropriate reservations of such.

CROPLAND RESOURCES

Rapid fluctuation of prices for farm products are expected to encourage producers to intensify production to bring low intensive use land into production, to modify established cropping patterns and possibly to bring some grassland into crop production. District supervisors urge, however, that producers consider all available alternatives before making radical changes in their operations.

Problems

1. There are approximately 25,000 acres of Class 6 land presently being cropped. Grain production on these lands is generally not feasible due to low yields and high erosion hazards.
2. Better crop residue management is needed on 100,000 acres.
3. Strip cropping and associated practices are needed on 80,000 acres for wind and water erosion control. Changes in cropping systems to include more second cropping has resulted in a tendency to destroy certain practices such as stripcropping.
4. Saline-seep occurs on an estimated one thousand acres of cropland. These areas have expanded considerably during recent years due to above average precipitation. Acres severely affected result in a total loss of crop production.
5. Crop yields vary considerably due to variations in precipitation, climatic factors, and management.
6. Much of the fertilizer application is not based on soil tests. This results in inefficient use. The problem is further compounded by shortages and inadequate commercial and on-farm storage facilities.
7. With approximately 75% of the harvested crop being wheat, there is a need for additional alternate crops to meet the demands of changing cropping systems.
8. Restrictions have been placed on certain chemicals for weed and insect control.

Opportunities

1. Develop an information program to point out the need and benefits of converting Class 6 lands to permanent cover, and maintaining Class 6 land in permanent cover.

2. Recommend that high priorities for cost-share programs be placed on conversion of Class 6 lands to permanent cover.
3. Encourage livestock management system to properly utilize forage production from Class 6 lands.
4. District will review conservation planning requests and establish priorities to reflect the needs of the land.
5. Conservation practices to control erosion will be based on a detailed study of the problem and a thorough analysis of alternative treatments on record in a conservation plan developed by the cooperator.
6. The district will place increased emphasis on using latest research information to reduce the development of saline-seep areas. The District will encourage research in this county on saline-seep areas.
7. Studies presently being conducted indicate that weather modification may influence patterns and amounts of rainfall in the District. The district recommends that research be limited to specific and carefully designed projects to study its effects on production, cropping systems, erosion, runoff and other consequences which may result from weather modifications.
8. Maximize the use of fertilizer by encouraging application rates based on soil tests. Develop an information program on procedures for accurate soil analysis.
9. Encourage the proper storage and handling of fertilizer materials.
10. Encourage the development of well-planned cropping system using recommended varieties and high quality seeds along with cultural management practices to increase production and reduce problems of weed and insect control.
11. Encourage the use of available programs to aid producers in the establishment of conservation practices to protect soil from erosion.
12. Encourage the continuance and expansion of publicly financed cost share programs for developing conservation practices.
13. Urge continuous support of technical and information agencies to provide expertise and coordination in applying the needed practices.

RANGE

The improvement of our environment and a potential for increased income are available to local ranchers and the general public through better rangeland management. Approximately 50% of the agricultural income is derived from the sale of livestock and livestock products. Range improvement will directly reduce soil losses from wind and water erosion on rangeland. Water and air pollution will be minimized. Stream flow stabilization and a clean sediment-free water supply will result from improved range management.

Problems

1. 30 to 35% or 358,000 acres of private and state rangelands are in need of additional treatment.
2. Need to develop a better understanding of the rangeland resource by ranchers and other users.
3. Lack of adequate water supplies to provide necessary water for efficient forage utilization during all seasons.
4. Economic loss due to 35% of the rangeland in fair to poor condition.
5. Competitive use of rangeland for livestock production, wildlife and recreation.
6. Need for better understanding of the rangeland resource by consumers.
7. Losses of livestock due to predators and reduced forage production from rodents and insect infestations.
8. Forage production varies considerably due to variations in precipitation and other climatic factors and management.
9. Loss of forage production due to increase of noxious weeds in some areas.
10. Need for increased management on fragile lands to reduce sediment pollution.

OPPORTUNITIES

1. In order to attain the district goals in the rangeland program of improving the rangeland resource, there will be established a coordinated effort between the Rangeland Resource Committee and the district to attain the goals established by the committee.

2. Encourage that the development of the rangeland resource be considered in its proper perspective and coordinated with other land use planning decisions in the district.
3. Broaden the information and educational program to develop a better understanding of the rangeland resource program and to include various management systems.
4. Serve in the area of predator control, by functioning as a liaison between local ranchers and predator control agencies.
5. Studies presently being conducted indicate that weather modification may influence patterns and amount of rainfall in the district. The district recommends that research be limited to specific and carefully designed projects to study its effect on forage production, changes in plant communities and animal populations, erosion, run-off and other consequences which may result from weather modification.
6. There is an economic potential for various types of recreational development especially in the areas of fee hunting and vacation farms and ranches.
7. There is a potential for additional livestock feeding which will make more efficient use of local resources and expand the economic base of the community.
8. Encourage the use of well designed grazing systems to bring about improved range condition and greater economic returns.
9. Encourage additional research which contributes to increased forage production and protection of the rangeland resource.
10. Encourage the use of tame grasses to increase forage production and provide protection to native grasses during critical growing periods.
11. Place planning priorities on critical erosive lands to reduce sediment production.
12. Encourage the use of available programs to aid ranchers in conservation practices to protect the rangeland resource.
13. Determine needs for stockwater and waterspreading development and make reservations of such.

PASTURE AND HAYLAND

The improvement of an environment and a potential for increased income are available to local ranchers and the general public through better use and more development of pasture and hayland.

The development and use of pasture and hayland will enhance and provide more rangeland management opportunities.

Problems

1. Obtaining water rights for development and management of hayland and pastureland.
2. Proper management due to inadequate fencing and water supply.
3. Poor management of pastureland and hayland.
4. Need for plant species adaptability and limitations.
5. Need for improved fertilizer program based on adequate soil tests.
6. Need for development of more productive hayland through use of water systems.
7. Need for better water management on systems.
8. Limited varieties of grasses suitable for these climatic conditions.

Opportunities

1. Determine water needs for livestock water and waterspreading developments and make reservation for such.
2. Develop education programs on pasture and hayland management:
 - a) combining native range with tame pasture
 - b) rotation of tame pasture
 - c) plant species and suitability
 - d) fertilizer response
 - e) proper water management
 - f) effect of grazing hayland
3. Encourage development of new and improved species suitable for this area.

WATER RESOURCES

Water is rapidly becoming a priceless resource and there are increasing demands to improve its quality. Community growth, agricultural needs, recreational uses and industrial development, are dependent on adequate supplies of good quality water.

Problems

1. Excessive run-off causes flooding which damages croplands, roads, bridges and dwellings built on flood plains.
2. High sediment loads carried by flood waters causes silting of water storage impoundments and damage to fish habitat.
3. Better utilization of water to increase feed production.
4. Variations in seasonal flow on all drainages resulting in under utilization of the water resource and loss of an economic opportunity.
5. Undetermined effects of potential strip mining on ground water aquifers.
6. Mixing of ground water aquifers from drilling and development of wells and exploration studies.
7. Reduction of artesian pressures to excessive use and waste.
8. Potential deterioration of ground water sources due to injection of salt water into oil fields.
9. Obtaining water rights for development.

Opportunities

1. Encourage land management practices that will reduce runoff and stabilize highly erodable soils.
2. Encourage the development of potential waterspreading projects, springs, pipelines, and other stockwater developments.
3. Integrate the resources of the total watershed area in planning water development projects.

4. Encourage inter-agency cooperation in developing community betterment projects.
5. Encourage complete study of ground water resources.
6. Support legislative action on eliminating need for water rights on water uses of five acre feet or less.

MINERAL RESOURCES

The natural gas and oil deposits developed in the district will continue to be an important resource. Coal deposits are extensive and are presently being considered for development. This development will have a tremendous impact on the economic, social and environmental aspects of the community.

Problems

1. More information is needed on the effects of mineral exploration, including coal, and development in regard to the quantity and quality of the ground water resources.
2. There is a lack of information pertaining to the development of coal resources.
3. There is a need for a better understanding by ranchers of leasing practices and arrangements.
4. Strip mining may result in accelerated erosion, sediment damage, water pollution and associated reclamation problems.
5. Many of the mineral rights are not under control of the surface owner.
6. Division of mineral rights from surface rights causes problems and extra costs to the surface owner, for keeping abstracts current.
7. Trespass by exploratory companies is practiced on county right-of-ways where only an easement has been granted.

Opportunities

1. The development of the coal resources will result in new industry and provide more employment for the area.
2. Encourage more reclamation studies aimed toward bringing mined land back into productive cropland status.
3. Support legislation to provide funding for studies of the ground water resources in the area.
4. Encourage the development of by-products resulting from various forms of coal processing.
5. Encourage educational programs to better acquaint landowners with all aspects of mineral leasing practices.

RECREATION & HISTORIC AREAS

Appraising the potential for recreation is an essential step in planning to meet the recreational needs of the community. Recreation is the most under-developed resource in the district. The development of this resource could provide an increase in the economic base of the community.

Problems

1. There is a need for additional recreational developments to meet the needs of all age groups.
2. There is a need for more water-based recreation facilities.
3. There is a need to educate local people of the economic opportunities through the development of recreation.

Opportunities

1. Establish a better liaison between various agencies during the early planning stages of road design in order that more consideration can be given to the development of watershed recreation facilities.
2. Work with and encourage local people to consider the development of an over-all recreation plan for the entire community.
3. Encourage educational programs to inform farmers and ranchers of the opportunities in the areas of recreation development.

FISH & WILDLIFE RESOURCES

Fish and wildlife resources are an important resource in the district. With the increased growth of outdoor oriented recreation, this resource will become an even more important consideration in the over all resource development program in the district.

Problems

1. A few careless and irresponsible people have caused poor relations between landowners and sportsmen.
2. There is no active local sportsmens group to establish a liaison between landowner and sportsman.
3. Public access and developed facilities for existing fish ponds are inadequate.
4. More pressures are being placed on private land each year for hunting.

Opportunities

1. Inform landowners of potential for various types of recreational developments, especially in the areas of fee hunting, guide service and vacation farms and ranches.
2. Encourage where practical, the development of wildlife habitat areas in conservation planning.
3. Consider items beneficial to wildlife development in the design of conservation practices such as fencing of structures, selection of species adapted to providing food and cover for wildlife, etc.
4. Establish a better liaison between various agencies during the early planning stages of road design in order that more consideration can be given to the development of water impoundment areas suitable for fisheries.
5. Sponsor programs designed to promote better relationships between sportsmen and landowners.

OTHER LANDS

Other lands in the district consist primarily of roads, farmsteads, rural schools, churches, cemeteries, etc. These areas if not properly treated can become sources of sediment production or areas for noxious weed infestation. It is estimated that 58% of the other land in the district is in need of additional treatment measures.

Problems

1. These lands without proper conservation measures, can be a major source of sediment pollution to rivers and streams.
2. These lands without proper treatment provide areas for noxious weed infestations.
3. Unstable ox-bows, streambanks, and headcuts are depositing silts into waterways.
4. There is a need for additional farmstead and feedlot windbreaks and a need for renovation of numerous older windbreaks.

Opportunities

1. Shaping of existing and newly constructed borrow areas along with stockpiling of topsoil will assist in getting these areas revegetated sooner, thereby reducing erosion and opportunity for noxious weed infestation.
2. Planting of trees add to the beauty of the countryside, and provide additional areas for wildlife habitat.
3. Consideration will be given to the protection of streambanks when projects are developed which may adversely affect the bank, channel or course of the stream.
4. The district will encourage proper measures to control existing streambank erosion problem areas.
5. The district will place increased emphasis on establishment of farmstead and feedlot windbreaks to provide increased soil protection, improved wildlife habitat and aesthetic value.

HUMAN & ECONOMIC RESOURCES

A number of social and economic problems relate to the population of the area. Many are deep seated and historical. Others are extensions of social changes affecting the state and nation. Development and improvement of public and community facilities will enhance the general economic and social climate of the entire district.

Problems

1. Out-migration of young people and lack of year around employment opportunities has caused a decline of population.
2. Farm numbers have been continually declining.
3. Lack of experienced farm labor because of its seasonal nature.
4. Lack of public transportation facilities and services to satisfy the needs of the agriculture community.
5. Rapidly rising costs of goods and services along with land value are making it increasingly difficult for existing operators to expand their enterprises.
6. Need for additional adequate solid waste disposal facilities.
7. There are limited medical services or facilities in district.

Opportunities

1. Encourage an on-going program to provide facilities and education for training a labor force to meet the needs of agriculture.
2. Encourage local leadership to recognize the potential for economic and social development of the community.
3. Promote the construction of private and community solid waste disposal sites through local, state and federal financing.
4. Continue to encourage information and training programs that will help keep farmers and ranchers informed on new technology management skills, market facilities and new or improved plant species.

IMPLEMENTATION

There are numerous techniques for implementing different elements of the districts program. However, the use of each technique will be specifically fitted to the policies, goals and objectives of the district.

A. General Implementation Tools

1. Conservation District Organization, Plan of Work and Projects

The Conservation District law provides broad authorities for implementing a Conservation District program. The District will provide leadership and utilize all possible assistance in carrying out their program. Standing committees and special committees, such as the Range Resource Committee, will be used as needed to further the objectives of the program.

Regular monthly meetings will be used to review progress and stimulate activities toward implementation of the District program.

2. Conservation District Cooperator Agreements

Voluntary agreements are negotiated between the conservation district and the individual land occupier or group, association, or entity of government to supply certain services according to a plan such as a Farm or Ranch Conservation Plan, a Range Management Plan, or engineering plans for a specific conservation practice.

3. Annual Plan of Work

Based on program goals and objectives, the supervisors will request assistance from local, state and federal agencies as needed to develop an annual plan of work.

4. Tax Policies

Possibly the most important but least understood plan implementation device is state and local taxation.

The tax values placed on land are often conservative, resulting in a direct subsidy to the land speculator. The low cost of holding land vacant is normally more than offset by increasing market values. This situation is a direct cause of urban and rural sprawl.

In other cases open land is over assessed according to speculative value because of surrounding development. This situation may be partly remedied by the "Greenbelt" law which now provides that qualifying agricultural land is to be taxed according to current rather than potential use.

5. Zoning

Zoning is an exercise of the police power, i.e., the power of the State to regulate in the interests of the health, safety and general welfare of the public. Some of the purposes of zoning include environmental preservation, limitation of congestion, protection of property values and adequate provision of community services. The county Commissioners may establish zones or districts for different uses of land and may regulate developmental patterns, building use and the area around buildings.

Section 16-4704, R.C.M. 1947, provides that zoning regulations shall be in accordance with the comprehensive plan. Comprehensive ordinances apply to an entire planning area and in the absence of such a plan may place the zoning ordinance in questionable legal status.

If a jurisdiction is experiencing emergency land use problems, a temporary interim zoning regulations may be enacted pending the completion of a comprehensive plan within a reasonable time. Such authority is provided to the county commission in Section 16-4711, R.C.M. 1947.

6. Land Use Regulations

Section 76-109, R.C.M. 1947, provides conservation district supervisors with the authority to formulate land use regulations within the district in the interests of conserving soil and water resources and preventing and controlling erosion. A referendum is then submitted to qualified electors for their approval or disapproval of the regulation.

7. Floodway Management

Conservation districts can contribute data to and become involved in floodway management. Pursuant to the Montana Floodway Management and Regulation Act of 1971, a floodway management program may be carried out as follows:

- a. A request for flood delineation studies is made by the local subdivision of government to the Montana Department of Natural Resources and Conservation.

- b. Completed studies are used if available, and federal agencies (U.S. Geological Survey, SCS, Corps of Engineers, etc.) are contacted by the Department for technical assistance.
- c. After delineation, the Department conducts a public hearing on the establishment of the designed floodway. As a result, floodway lines will be recorded and data furnished to local officials.
- d. The local governing body then has a maximum of one year to establish and enforce floodway land use regulations at least as stringent as those established by the Department.
- e. After local regulations are in effect, or one year after transmission of the floodway data, permits must be obtained before establishing or altering any artificial obstruction within the designed floodway.

8. Subdivision Regulations

The Montana Subdivision and Platting Act of 1973 requires each local governing body to adopt and enforce subdivision regulations by July 1, 1974. These regulations must meet or exceed state minimum requirements and must contain provisions for an environmental assessment to be submitted by the subdivider. Local review procedures as well as district representation on county planning boards will ensure that the Conservation District is afforded an opportunity to evaluate each proposed subdivision within the district.

B. Assistance

1. Financial and Technical

Major types of assistance available from federal agencies include the Soil Conservation Service and Agricultural Stabilization and Conservation Service programs. In addition, water and sewer facility grants and loans from the Farmers Home Administration and Department of Housing and Urban Development "701" planning grants are also available.

2. Private Assistance

A source of help often overlooked in planning and implementation of programs is the private sector. Citizen groups, area banks or industries, and chamber of commerce may be crucial to plan implementation and should be involved in planning throughout the process.

Resolution of Adoption

On _____ at Baker at a regular meeting of the board of supervisors, consisting of Chairman, Robert Irvine; Vice Chairman, Robert Sparks; Treasurer, Reinhold Straub; and Supervisors, Harold Jensen, Allen Rustad, Roy Bettenhausen, Leon Rieger, and Secretary, Gene Hoff, did meet and review the prepared Little Beaver Conservation District program, and after such review did mutually agree and resolve that such district program be adopted.

Signed _____ day of _____

Supervisors:

Chairman _____

Vice Chairman _____

Treasurer _____

Supervisor _____

Supervisor _____

Supervisor _____

Supervisor _____

Secretary _____

